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APRIL 1998



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Award Winner Feature Category

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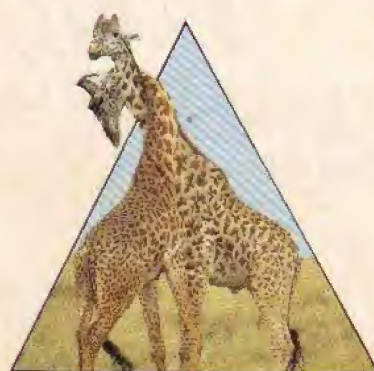
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A mare watches over her baby keeping it  
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© Kathi Lamm, 1989

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## Sheep Watch

Zeus is on coyote patrol. The large, white shaggy dog guards 2,500 sheep on a ranch in Idaho. Before 1978, only about 1,000 dogs were used on ranches. Today that number is closer to 8,000. Why?

In many states, it is now illegal to hunt coyotes by helicopter or to poison them. Ranchers depended on these methods to keep the coyote population down. Now, they've turned to dogs as a more practical and humane way to keep coyotes away from sheep.

Jeffrey Green, a wildlife scientist, did a study to find out who was using guard dogs and how well the dogs protected sheep.

Green sent out 1,000 questionnaires to ranchers all across the U.S. "More than 80 percent of the ranchers said that the

dogs saved sheep," says Green.

Why? The dogs are raised with the sheep and treat them like other members of their pack. They protect them from enemies just as they would their pack members.

And that's what keeps the flock "sheep-shape!"

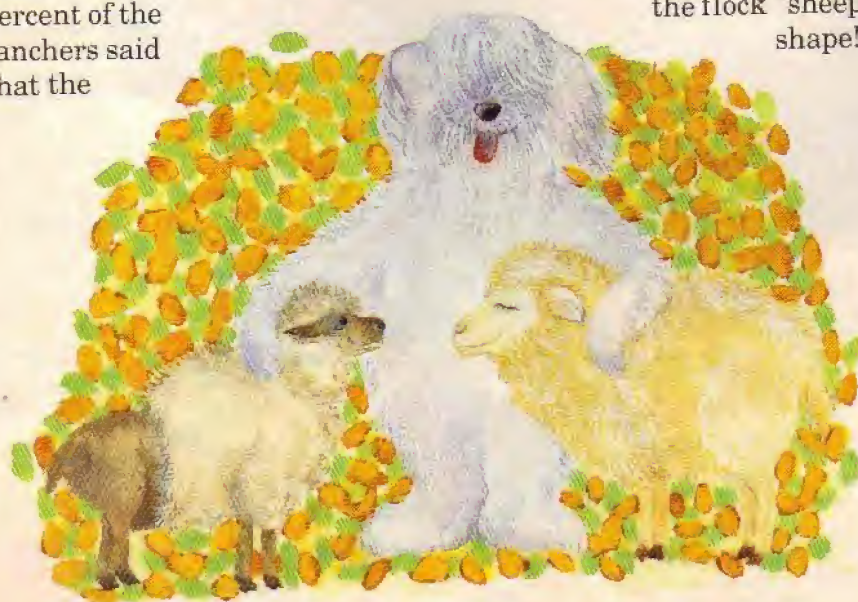


ILLUSTRATION BY NAOMI SIMON

## Pack Your Pillow

Feeling sleepy? Then it may be time for your afternoon nap.

According to new research on sleep habits, the human body performs best when it gets both a good night's sleep *and* a nap in the afternoon.

In one study, sleep researchers put volunteers in an underground room without any way to tell the time. The volunteers were told they could sleep any time they wanted.



ILLUSTRATION BY JO LYNN AL COHEN

The volunteers tended to sleep twice: a long period at night and a short period in the middle of the afternoon.

Researchers also found that most people's naps last from 30 to 90 minutes. After napping, people have more energy. One reason for this, say sleep researchers, is that when you nap you sleep very deeply.

"It's best to awaken from a nap gradually," says David Dinges, a sleep researcher at the University of Pennsylvania. "Give yourself a few minutes before doing anything very important."





## Climb Every Window

Out-of-work mountain climbers can always find a job in Paris, France—scrubbing the new entrance to an old museum.

The entrance to the Louvre Museum is a pyramid-shaped

structure. It is made entirely of glass and, because of its shape, is hard to clean.

So, the pyramid is scrubbed by 20 mountain climbers. The crew washes the windows as they ease themselves down the glassy slopes. Smooth move!



## Ads in Space

Most rockets are decorated only with a country's name and its flag. But the Soviet Union has other plans.

The Soviets need to raise money for their space missions. One way to get extra cash is to sell advertising space on the side of their rockets. Companies—like McDonald's or Nike—would pay to have their names painted on the craft.

A U.S. company, the Space Commerce Corporation, is in charge of getting companies to advertise on Soviet rockets.

So far, one Italian company has advertised. "They ran an ad on the side of a Soviet rocket," says Jonathan McDonald, a spokesperson for the Space Commerce Corp. "It lasted about 20 seconds—from liftoff to when the bottom of the rocket was discarded."

## Start Counting

Ever wonder how many people live in the U.S.? Well, that's what the U.S. Census wants to find out.

The census takes place every 10 years. On April 1, 1990, your family will receive a Census form. The filled-out form helps the government figure exactly where and in what conditions people live. It helps U.S., state

## CENSUS '90



and local governments plan where to build new schools, roads or hospitals. It helps businesses decide where to build factories or locate stores.

So keep your eyes open for the 1990 census form. It counts!



## So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you heard the story.)

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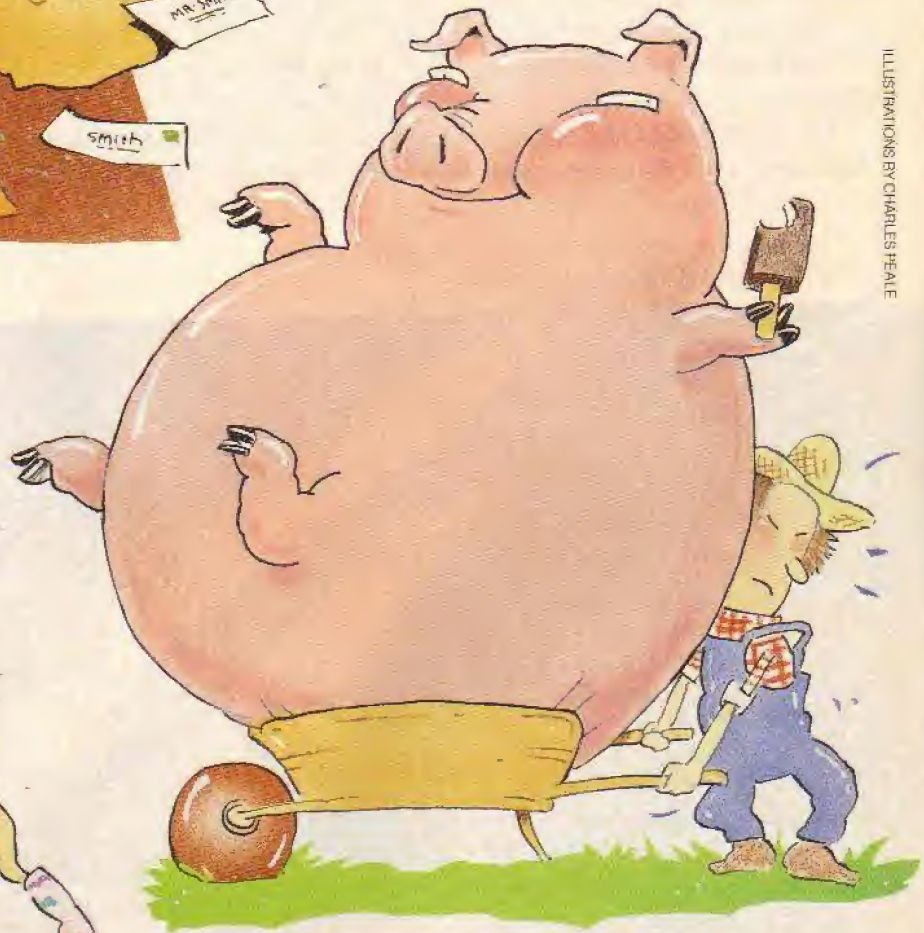


# FACT



There are more than 2,400,000 Americans named Smith.

The heaviest pig of all time weighed 2,552 pounds.



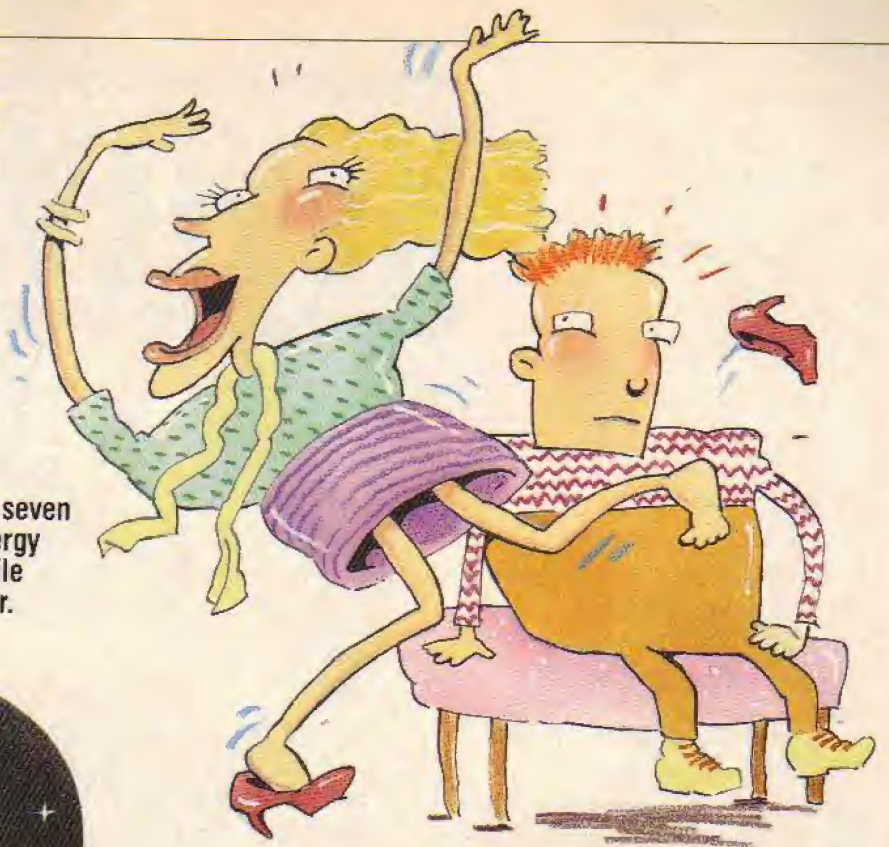
Each year, Americans spend more than three trillion minutes on the telephone.

ILLUSTRATIONS BY CHARLES HEALE

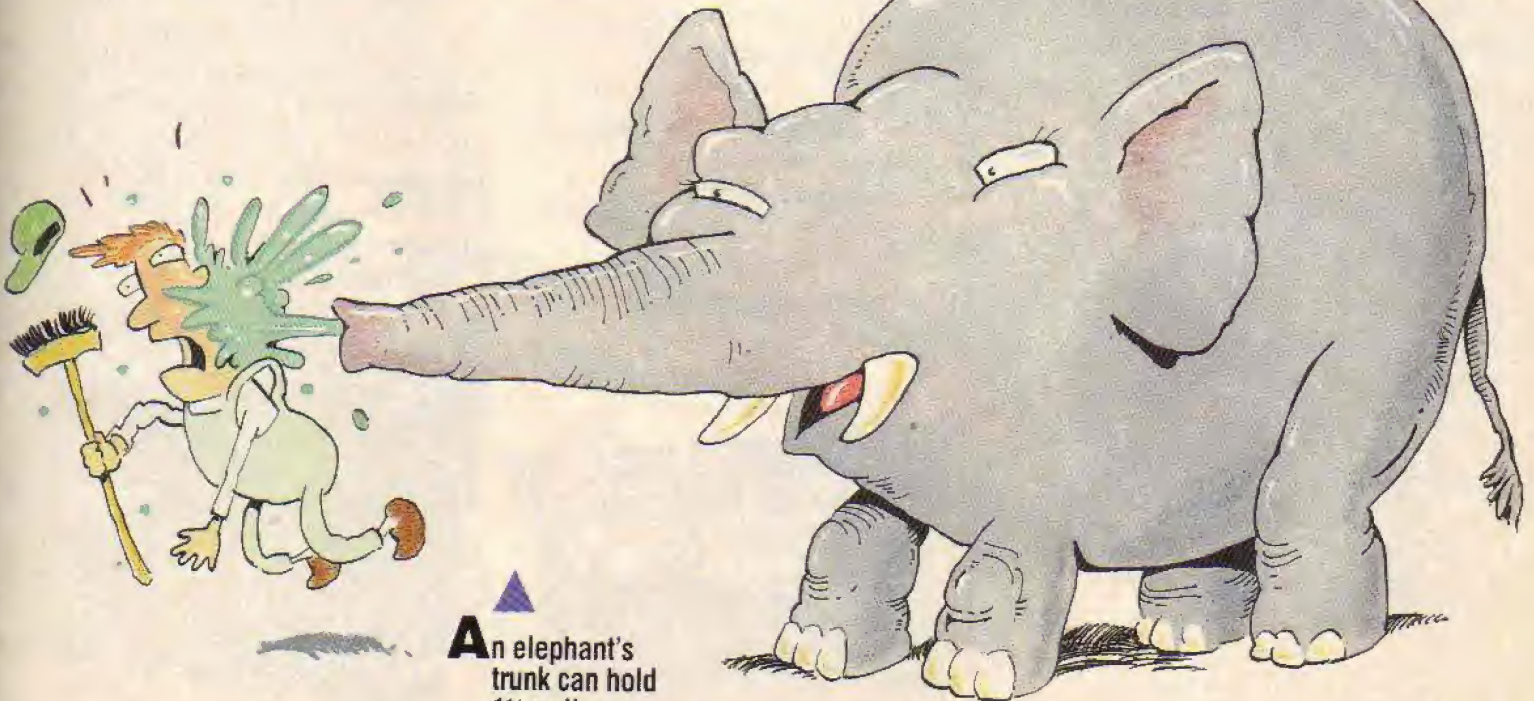
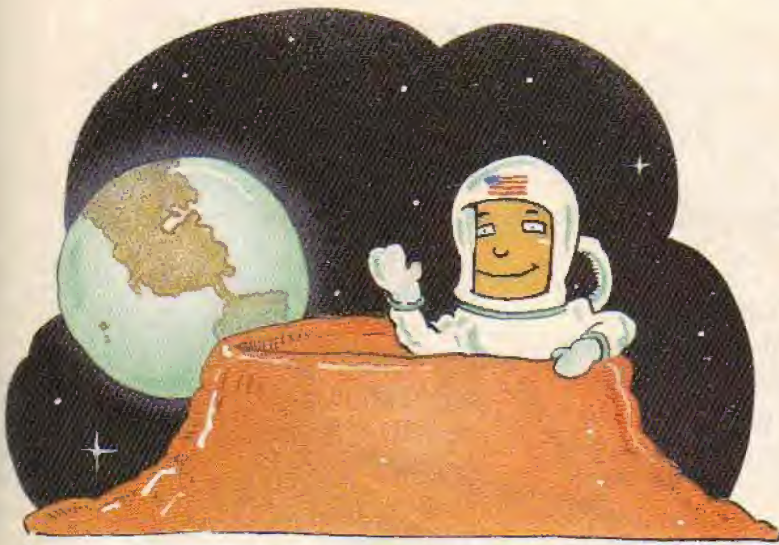


# Olds

While dancing, your body uses seven times more energy than it uses while sitting in a chair.



The moon has about 50,000 craters.



An elephant's trunk can hold  $1\frac{1}{2}$  gallons of water.



# REVIEWS



## B O O K S

### Kids' Book of Secret Codes, Signals and Ciphers

by E. A. Grant

Running Press, \$6.95

Calling all secret agents! Here's a book for you. It's all about cryptograms, invisible ink, Morse code and other ways to send secret messages.

There are also interesting stories about how some famous codes were invented. *Kids' Book of Secret Codes* even comes with a cipher wheel to get you started making your own secret messages.

It's the type of book you won't want to put down—after all, you wouldn't want anyone else to get a hold of it and figure out your secret messages.

—Rhetta Aleong

### Start Exploring the Night Sky

by Dennis Mammana

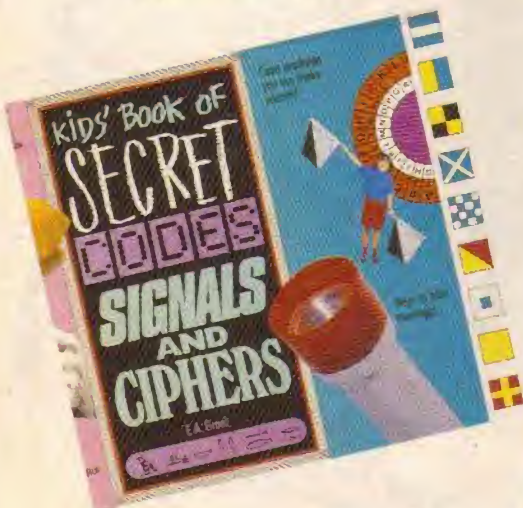
Running Press, \$9.95

Are you afraid of the dark? Do you wish you had more things to do at night? Well, here's a book full of things to learn and do during those evening hours.

As a stargazer, you'll learn about stars, planets, galaxies, constellations and comets. You'll also learn the tricks of the trade, like how to get your eyes adjusted to the dark, and how to see faint, far away stars.

If you have any questions about the stars and planets, *Start Exploring the Night Sky* will help you see the light.

—R.A.



## S O F T W A R E

### Pipe Dream

For IBM, Macintosh and Amiga Computers

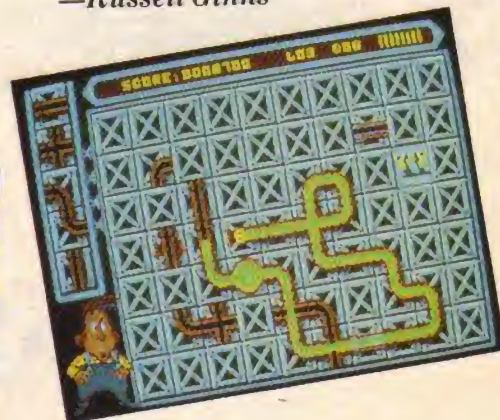
Lucasfilm Games, \$34

Think fast! Sloppy seepage is streaming through the sewers. If you don't tack on enough new tubing, you'll be soaked!

This new computer game isn't very complicated. Sections of pipe appear one after another and you simply point to where you want them to go. The hard part is that you have to stay ahead of the goop that's running through the pipes. And the better you get, the faster the goop gets.

One or two players can play *Pipe Dream* at the same time. And there are more than 32 levels of difficulty. If you're looking for a program that is challenging, but doesn't take a long time to learn or play, you'll like this silly simulation.

—Russell Ginns





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# LIGHT

**G**eorge Atiyeh lives in a small town in Oregon. But lots of people there don't speak to him anymore. At the local football game, he sits by himself. People call his house to leave nasty messages. And his kids sometimes get picked on at school.

George isn't a bad guy. He just works for an unpopular

cause. Unpopular where *he* lives, at least. George used to make a living cutting trees in Oregon's thick forests—but no longer. He stopped when he realized that since so many trees were being chopped down, the forests might one day be gone. "My conscience was bothering me," he says. And he wants his neighbors to stop cutting so much, too. But many of them make their liv-

ing cutting trees. So they are angry because they think George's new work might end their jobs.

## Looking Down At the Problem

George Atiyeh's new work is piloting his airplane for Lighthawk. Lighthawk is an organization of high-flying environmentalists. "On the



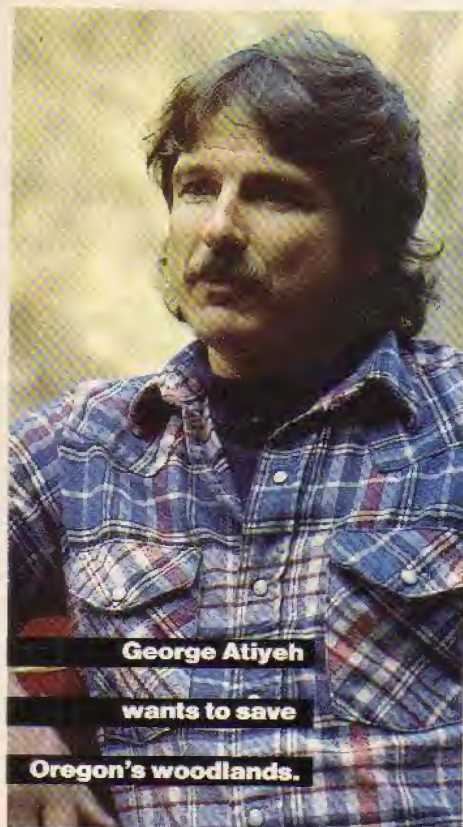
**A Lighthawk plane  
piloted by George Atiyeh  
soars over some  
clear-cut forests.**



# HAWK!

## PILOTS TAKE TO THE SKY TO FIGHT POLLUTION

by Renee Skelton



**George Atiyeh**

**wants to save**

**Oregon's woodlands.**

ground, you can't get the whole picture," says Bruce Gordon, another Lighthawk pilot. "But up in the air, Lighthawk can provide a bird's-eye view of the problem."

That's the way George Atiyeh got involved. He didn't think *his* tree-cutting was doing much harm—until he took up flying.

"Borders of forest are left along roads," he told CONTACT. So from the ground, it looks like most of the trees are still there. "But you get the true picture when you look down on the forest from above," says George. "In many places there are no trees left at all."

Lighthawk's mission—and now George's, too—is to take people up into the air and show them the problems they can't see from the ground.

Reporters. Government officials. Business people. Environmentalists. Just about anybody is welcome on one of Lighthawk's small single-engine planes.

"We're an educational tool," explains Gordon. Reporters who learn about problems from Lighthawk air their findings on TV and write about them for newspapers and magazines. Lighthawk hopes the public will then get involved and ask for action.

Lighthawk has three staff pilots: Michael Stewartt, who started Lighthawk 10 years

ago, Bruce Gordon and George Atiyeh. About 30 other volunteer pilots do most of Lighthawk's flying. When not on Lighthawk missions, they go about their regular jobs.

One Lighthawk pilot is a lawyer in California. Another is an auto mechanic in Idaho. And there's a pumpkin farmer in North Carolina. Others include a doctor, a firefighter, a sculptor and a forest ecologist. But they all have one thing in common: They want to use their flying skills to help protect the environment.

The pilots get lots of chances to do just that. Each week, Lighthawk's office in Santa Fe, New Mexico, gets five or six calls for help. They work for big groups like the Sierra Club



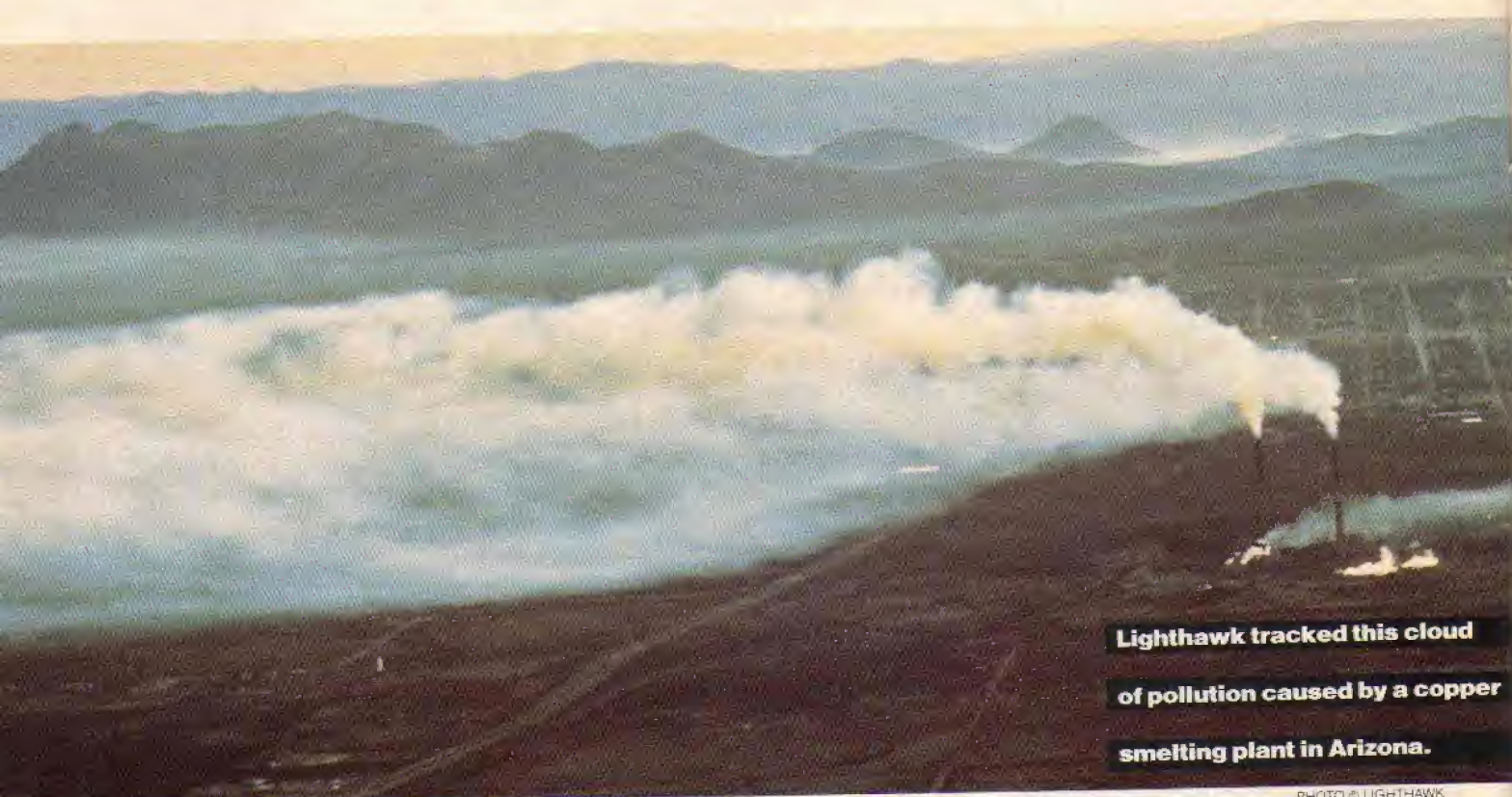
**Michael Stewartt,**

**Lighthawk's founder,**

**calls his group "The**

**Wings of Conservation."**





**Lighthawk tracked this cloud  
of pollution caused by a copper  
smelting plant in Arizona.**

PHOTO © LIGHTHAWK

and the Nature Conservancy. They also work for small groups who often have good causes but little money to spend. Lighthawk survives on membership dues and donations. And they try not to turn down a good cause.

### **All In a Day's Work**

Forest clear-cutting is a big Lighthawk issue now. In clear-cutting, loggers chop down all the trees in acres and acres of forest. Not only do the trees die, but also the plants, insects, birds and animals whose survival depends on the trees. Without the trees, the land erodes—wears away. Streams clog and fish die. Worst of all, ecologists doubt that clear-cut forests can grow back as before: The wildlife and plants killed

off there will never return.

In Oregon, the ancient forests are disappearing fast. George takes Lighthawk clients up in his little Cessna 170 to look at the problem. The plane bounces down his small grass runway in the mountains. Then it slowly climbs over the forest treetops. But it's not long before the plane is passing over long stretches of ground made up of nothing but bare dirt, brush and fallen trees. At this height, miles and miles of destruction are visible.

Then the tiny plane noses up and soars over a ridge. It darts down into another valley. This one has not been touched. The idea is to show the passengers the beauty of areas not yet lost.

The plane then swoops around a corner into another valley, and back into the clear-

cut wasteland. "After they see it, most people are in a state of shock," George says. That's the whole idea.

But this is not Lighthawk's only type of job. For example, some Columbian sharp-tailed grouse needed a ride from Canada to a nature preserve in Montana. The birds are in danger of dying out in Montana, so scientists want to bring in new stock to breed. Lighthawk pilot Max Fretz has volunteered his airplane for two years to carry the birds.

Pilot Bruce Gordon helped an environmental group in Montana track chemical waste from a mine. It was polluting a nearby river. From the air, they spotted the waste seeping out of the mine. The pilot and his passengers followed its trail into the river—and got pic-



tures as proof.

But one of Lighthawk's biggest victories came in 1987. A copper smelting plant in Arizona was pouring tons of pollution into the air each day. But no one could get the plant to stop.

Then in 1985, Lighthawk's Michael Stewartt joined the fight. He took scientists, journalists and officials up for a look. Stewartt tracked the pollution in his Cessna for 60 miles. Newspaper cameras clicked. TV film rolled. Officials saw how the poisonous cloud was flowing over their states.

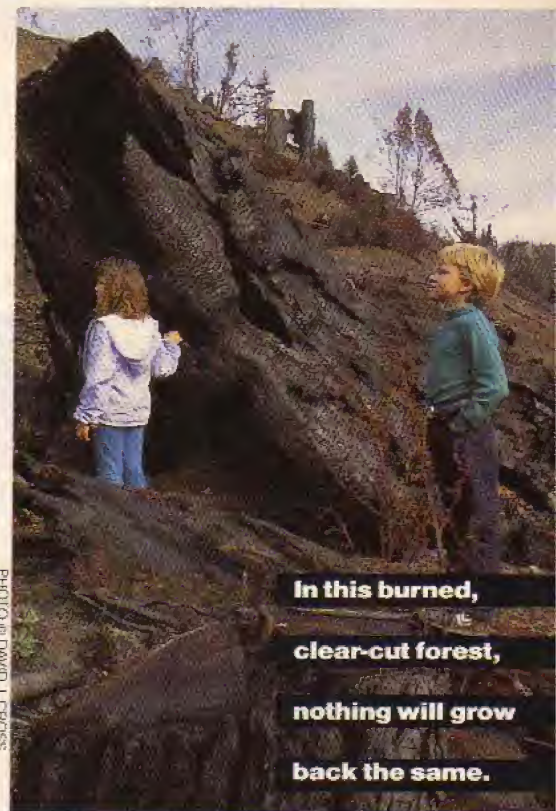
The result? News stories, pictures and a lot of angry peo-

ple. The smelters put up a fight. "But in the end," says Stewartt, "we got them shut down."

## Getting Involved

Environmentalists and many others are thrilled with the work Lighthawk does. But some people who cause the problems are not. They would love Lighthawk to just go away. But that's not likely to happen. Still, Lighthawk can't do the job alone. Not everyone can fly planes. But people like George Atiyeh say there are other important ways to get involved.

"I want kids all over the U.S.



**In this burned,  
clear-cut forest,  
nothing will grow  
back the same.**

PHOTO © DAVID J. CROSS



**Ed Coffman, a Lighthawk  
volunteer, flies people  
over Appalachian forests.**

PHOTO © 1989 TIM BARNWELL

to understand something," says George. "These are national forests. That means these are THEIR lands. These are THEIR forests. And if kids and adults don't want to see the forests harmed, they have to write letters. They have to say so."

Like the other members of Lighthawk, George Atiyeh has been using his flying to help many others say so. So what if he has a whole bench to himself at football games? "I don't really care," he says, "because I know what I'm doing is right." ♦





# SPECIAL

## CONTACT VISITS A HOSPITAL



**L**ast April, Coral Nolan's show horse had a baby about 10 days earlier than she was supposed to. That wouldn't be a big deal for people, but for horses it's a very big deal. Baby horses (called "foals") still have a lot of growing to do right before they're born!

*So, when the baby-named Werley-was born, he was small and sick. Healthy foals weigh an average of 100 to 125 pounds at birth. Werley weighed just 68 pounds. The tendons-the tissues that hold muscles to bones-in his legs were weak, and he had blood infections. He couldn't even stand up.*



Luckily, people at the farm where Werley was born knew what to do. They took him to a special hospital for newborn foals, run by Dr. Wendy Vaala. The hospital is part of the University of Pennsylvania's large animal veterinary school in Kennett Square, PA.

"At the school we use medical technology developed for humans to help mares and foals get through difficult births," Dr. Vaala told CONTACT.

The hospital looks a lot like a horse farm. It is surrounded by fenced pastures and has seven barns. When CONTACT visited last summer, the clinic for the newborn foals was in one of the barns. Inside, there are four specially designed stalls for the foals. Two of them have doors so that mares next door could see their babies.

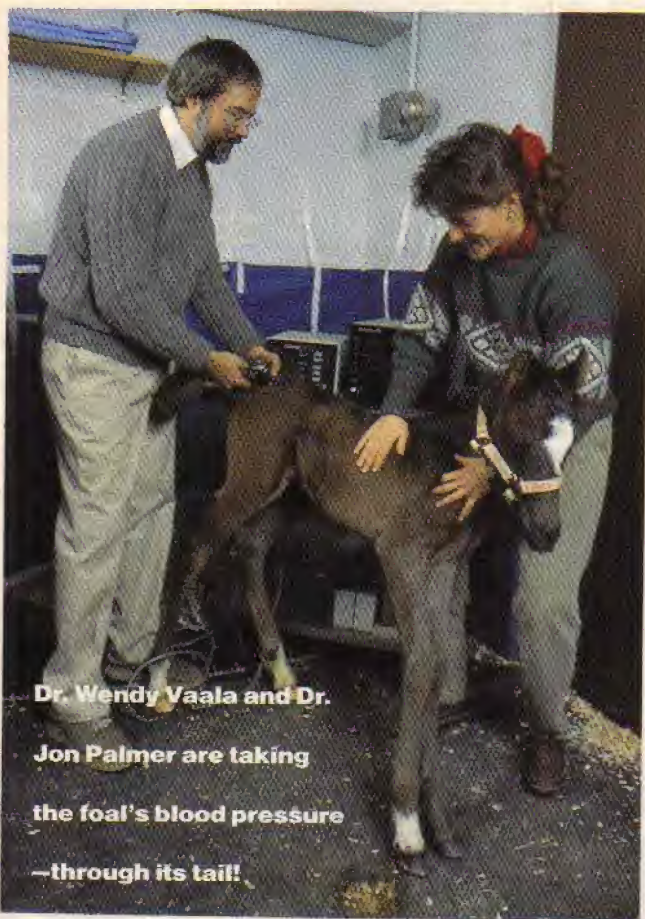
Last year, the hospital treated 75 foals that came from six different states. In addition to treating premature foals like Werley, the hospi-



# DELIVERY

by Sara Siegel

## FOR BABY HORSES



Dr. Wendy Vaala and Dr.

Jon Palmer are taking

the foal's blood pressure

—through its tail!

perature was about 98 degrees. (A healthy horse temperature is a little more than 100 degrees.)

Werley was treated like a person in other ways, too. Because he was too small to suck from a bottle, he was tube-fed a formula like the one given to premature human babies until he could drink goat's milk from a bottle. He also took drugs similar to ones people take to fight infection.

Veterinarians checked Werley's blood pressure three times a day. With people, that's done by wrapping a band around an arm which picks up the pressures of the heartbeat. With a horse, doctors wrap the band around the horse's tail!

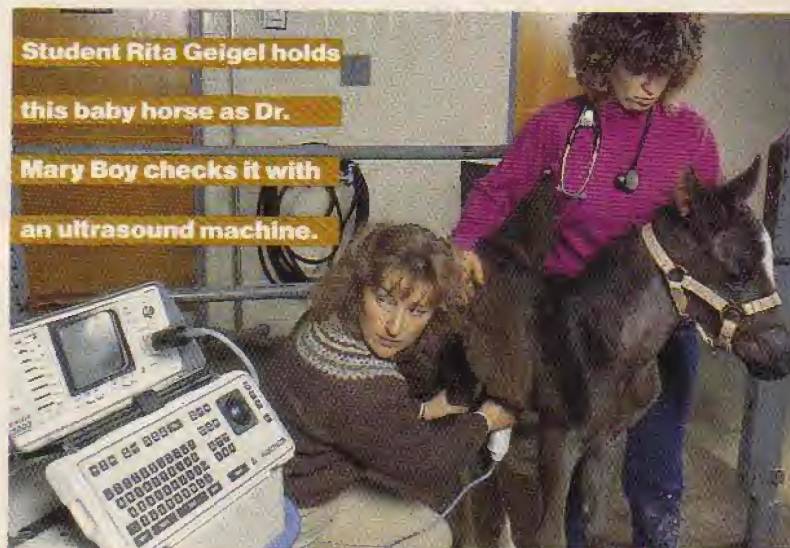
### On the Mend

The doctors also checked Werley's bladder with an ultrasound machine, which uses sound waves to take pictures of what's going on inside an animal or person. "It's just like what you see in an emergency room at a human hospital," said Dr. Jon Palmer, one of the vets.

As his health improved, Werley was fitted with two pairs of corrective shoes to support his wobbly legs. "The shoes are kind of like rubber legs," explained Coral Nolan, Werley's owner. The shoes are thin pieces of metal that fold

tal helped some twins to be born. And they took care of foals that didn't get enough nutrition before they were born or enough air at the time of their birth. The vets also treated foals that had a hard time being born, and others with a variety of illnesses.

"After Werley arrived," recalls Dr. Vaala, "we put him in one of the foal stalls, which are padded with rubber and contain inflated rubber mattresses, soft pads, blankets and pillows." The foal stalls are really incubators—the see-through, box-like beds that some human babies are put in after they are born. Heat lamps keep the foals comfortable and warm. The warmth was very important for Werley, because his tem-



Student Rita Geigel holds

this baby horse as Dr.

Mary Boy checks it with

an ultrasound machine.



over a foal's hooves and extend back about an inch.

Three months after he was born, Werley had gained weight, his legs were strong, and he was playing in a pasture with two other foals. He is in such good shape, in fact, that Coral has decided to train him to be a show horse.

Single foals, such as Werley, are the usual patients at the hospital. Occasionally, however, horses will have twins. When they do, the babies are very small and often die. Shnutz, a brown colt with a black mane and tail, was born in May. Even though his parents are powerful race horses, Shnutz was a runt. Dr. David Fine, who owns Shnutz, said Shnutz weighed only 50 pounds when he was born, and like Werley, his legs weren't very strong.

The veterinarians fed Shnutz a mixture of horse and goat's milk with a baby bottle every hour to help him gain weight. They also did just what doctors do for human babies when they don't grow enough before they are born. They gave Shnutz minerals to strengthen his bones

and fitted him with splints and corrective shoes to help him walk. Two months later Shnutz weighed 115 pounds, and his legs were stronger!

Shnutz moved to Dr. Fine's house, where he lives with Dr. Fine's son David Jr. and daughter Jenna, two horses, a pony, dogs, cats, rabbits, hamsters and fish! When the Fines brought Shnutz home, David Jr. gave him his bottle every three hours, except during the middle of the night. Dad did it then!

## Imperial Princess

Sometimes the foals just have a hard time being born. For example, Luisa Cuprill's mare had trouble having her baby last spring. The foal, which had a front leg caught inside its mother, was stuck!

Mrs. Cuprill loaded the mare in a horse van and rushed her to the hospital. When they arrived at the emergency room—an enormous white room with a big cement stall in one corner



Wendy Vaala uses the same type of stethoscope to check a horse's heartbeat as doctors use on humans. The foal's mother looks on.

PHOTOS © ANITA SUMA



and a small laboratory in another—two doctors pulled the foal out by its front legs. The baby was a filly, named Imperial Princess.

Imperial Princess had trouble breathing. So, the veterinarians put her on a ventilator—a machine to help her breathe—similar to the ones used in human hospitals. She received oxygen

from an oxygen tank through a tube in her nose.

Three months later, Imperial Princess was doing more than fine. “She has all the qualities of being a good race horse,” Mrs. Cuprill said. And, like other foals that spend so much of their early life around people, Imperial Princess was unusually friendly. According to Dr. Palmer, “When they grow up with people, they expect people to play the way they do!”

Whether born at home or at the clinic, about 80 percent of the horses that were treated at the University of Pennsylvania clinic last year lived. “In fact,” Dr. Vaala told CONTACT, “several of the horses we have treated over the years have won horse races and shows.”

The medical practices the doctors at the clinic are using are helping horses to live. And many of the techniques and machines were first developed for human use. So thanks to doctors and scientists who try to save humans, horses can now lead normal, healthy and long lives. And that makes very good horse sense! ♦



When a foal is feeling better it gets exercise. This horse is going for a walk.

Lynn Hunter, a nurse at the horse clinic, feeds this newborn a bottle filled with goat's milk.



# A FOAL IS BORN

You've just read about making sick horses better. Now let's take a different look at the horse world: this time, at how a baby horse—called a foal—is born.

Usually horses are born at night, because in ancient times darkness protected a newborn from predators—enemies that might try to kill it. However, our horse, Adele, is giving birth during the day—which made it easier for the photographer to take pictures of the event!



It takes about 340 days (11 months) for a horse to grow inside its mother. Safe inside the mare, the foal has been lying on its back, surrounded by a protective sac. When he's ready to come out, he turns onto his stomach. His head faces the rear of his mother. Here the foal's front legs and part of the head are just appearing.



The horse's owner is helping the foal to come out, but usually horses give birth on their own—with no human help. In a herd, the other horses stand nearby making sure that no one will disturb the new mother during the birth.







3

It takes between 15 and 30 minutes for a foal to be born. He's still in the sac, but soon he will wiggle out of it. When he tears the sac, he breathes on his own.



4

Once the foal is out of the sac, his mother starts to lick him. This not only cleans him up, but it helps make him warm, and helps remove mucus from his nostrils so he'll breathe more easily. The umbilical cord is no longer attached to the mother. This cord passed nutrients and oxygen from the mother to the foal while he was still inside his mother.



5

Thirty minutes after birth, the foal tries to stand up. It's hard at first, but soon he gets the hang of it. Standing up fairly quickly after birth is an instinct. In the wild, if the foal couldn't walk or run, it would be left behind by the herd—including its mother.



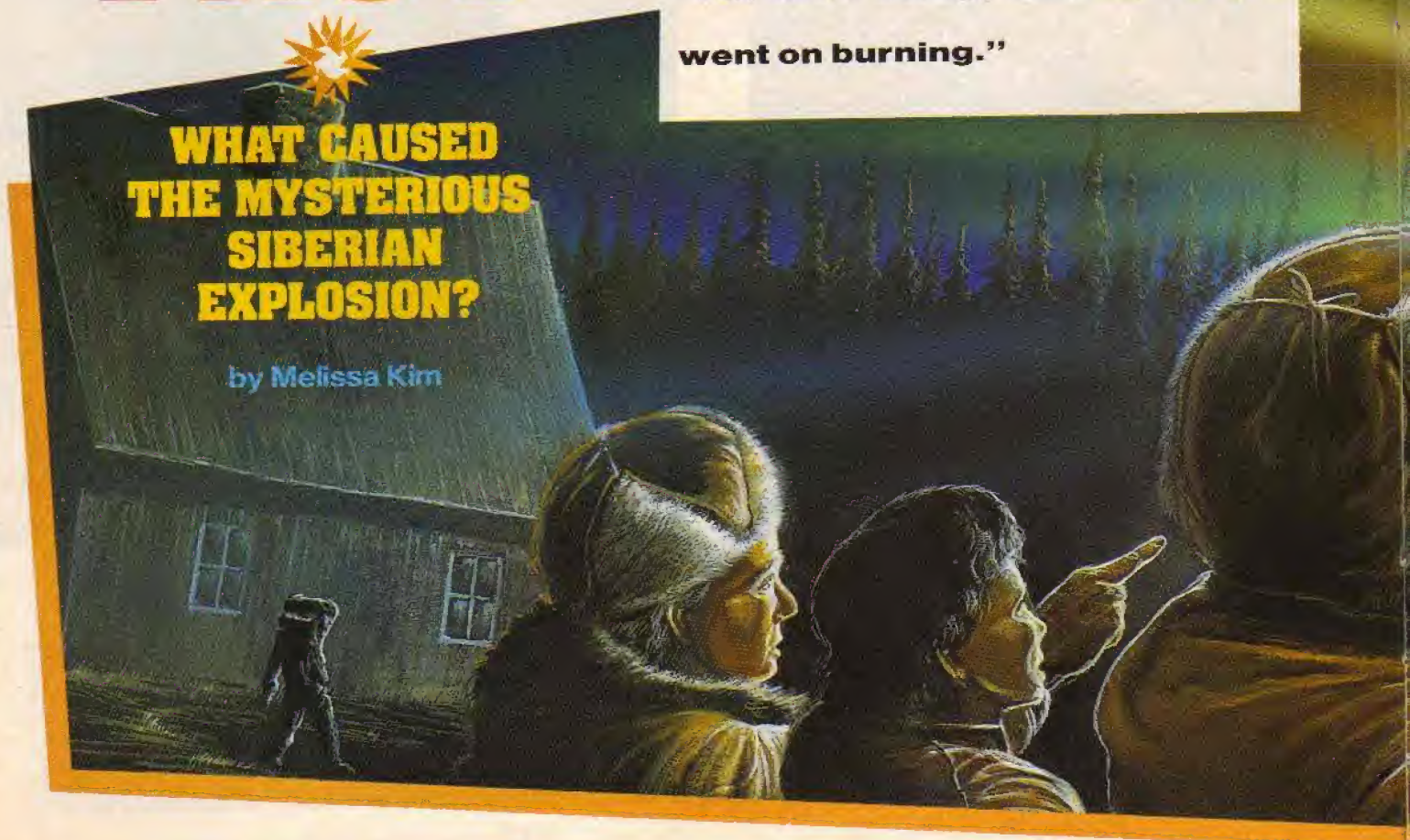
# A BLAST FROM THE PAST

**WHAT CAUSED  
THE MYSTERIOUS  
SIBERIAN  
EXPLOSION?**

by Melissa Kim

**K**oso Lapova was walking outside when she looked up at the sky with horror: "I saw the sky in the north open and fire pour out. The fire was brighter than the sun."

Vasily Okhchen and his family were asleep when suddenly, they all flew into the air. He said, "The ground shook and an incredibly long roaring was heard. Everything was clothed in smoke from the burning, falling trees. The roar died away, but the forest went on burning."





Other witnesses spoke of something in the sky that burned so bright, they could not look at it. There was a terrible crash that made all the buildings shake. One newspaper reported: "A forked tongue of flame broke through the cloud. Everyone thought the end of the world was approaching."

It *wasn't* the end of the world (or you wouldn't be reading this!), but it actually happened and was definitely awesome. Here is what scientists know about this strange event, which, 82 years ago, frightened Koso and Vasily and a lot of other people:

On June 30, 1908, a large explosion flattened all the trees for 20 miles in Siberia, a remote part of the Soviet Union. From as far away as 250 miles, people saw a pillar of fire. People living 500 miles away heard the crash. Across Europe, shining clouds in the sky made the nighttime as bright as day. Shock waves carried halfway around the world. Yet there was no crater, no bomb, no trace of anything hitting the ground.

This explosion is known as the Tunguska event, because it

happened in the Tungus region of Siberia. Scientists know when and where it happened. But that's about all they know for sure. To this day, the Tunguska event remains one of nature's greatest mysteries.

At the time, scientists weren't able to investigate the explosion. The area is very hard to get to, even today. Also, the next 40 years brought lots of changes to that part of the world: Russia faced a revolution, and Europe went to war twice. The investigation had to wait. ☞

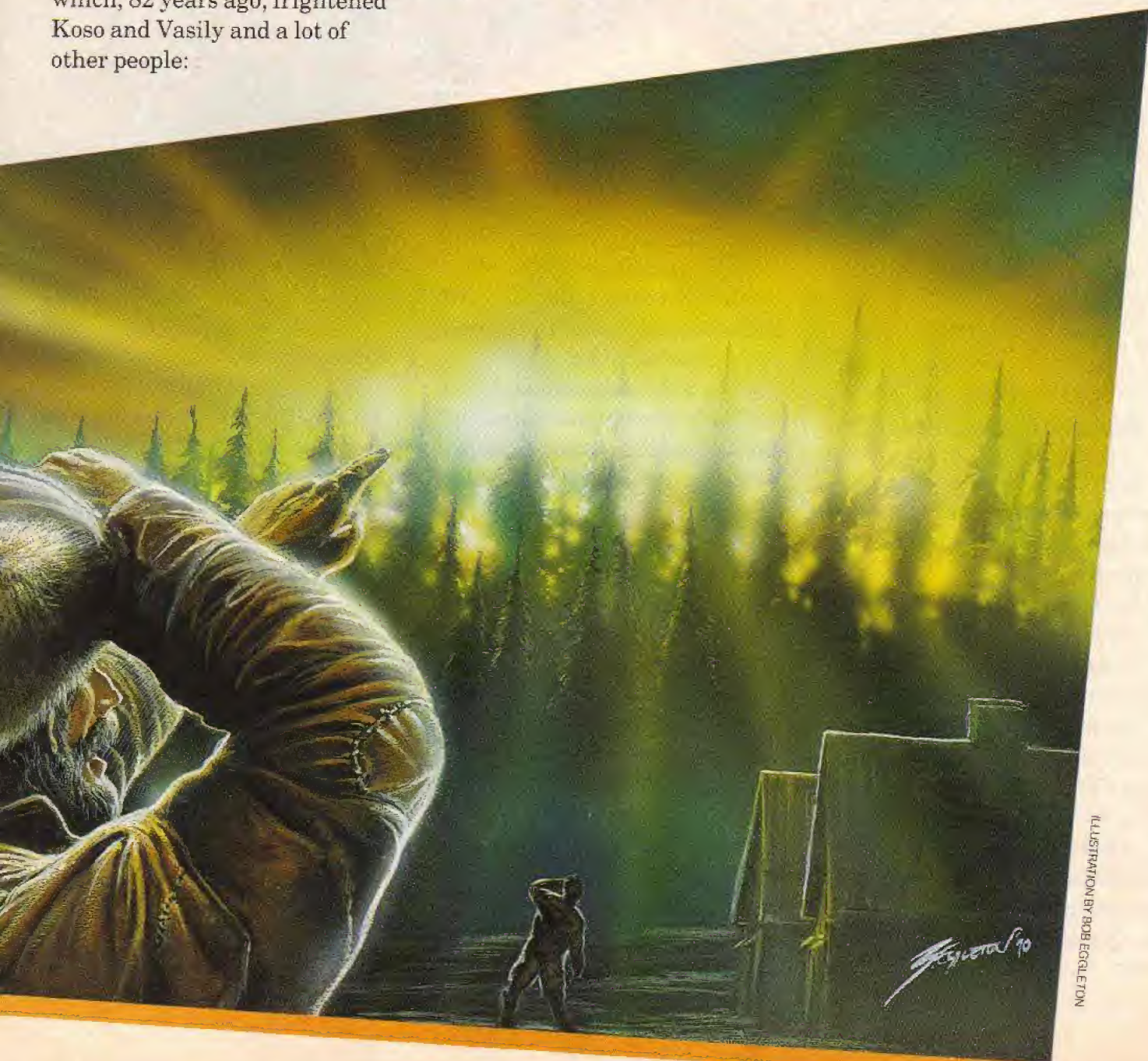


ILLUSTRATION BY BOB EGLETON



**A comet is made up  
of ice, frozen gas  
and other slushy  
materials.**

In the last 40 years, however, scientists have studied the available information and tried to reconstruct the event. Some believe a black hole passing right through the planet caused the explosion. Others guess that an alien spaceship searching for water exploded over Tunguska!



## **Asteroid or Comet?**

But most scientists think the Tunguska event was caused by a comet or an asteroid that exploded about five miles above the Earth's surface. One of these scientists is English astronomer David Hughes. He has studied the Tunguska event in great detail. Hughes told CONTACT, "I think that it was a comet or the nucleus of a comet."

A comet is an object that was born when the solar system was formed. It is made up of ice, gas and other slushy materials. A comet is sometimes

described as a "dirty snowball."

An asteroid is different, however. It was also created at the birth of the solar system, but it is made of iron, rock and minerals. An asteroid is solidly packed with hard materials.

That's why Hughes thinks it must have been a comet, not an asteroid, that exploded above Siberia. He figures that an asteroid is so compact it would have zipped through the Earth's atmosphere and crashed into the ground, leaving a big hole.

A comet wouldn't have made it all the way through the atmosphere, because it is not packed tightly enough. (Imagine you're standing in a swimming pool and you hit the water with your fist. Then imagine hitting it with the same force, but with an open palm. Your fist slices deep

through the water like an asteroid through the atmosphere. Your palm meets more resistance and doesn't go as deep, like a comet.)

When the atmosphere stopped the comet short in its tracks, Hughes says, a lot of heat was produced, making the comet explode. Because it exploded above the Earth, there were no traces of it on the Earth's surface.

Not everyone is happy with this theory, however. Zdenek Sekanina, an astronomer at NASA's Jet Propulsion Laboratory, agrees that an object exploded five miles above the planet. But he figures the object was moving at less speed



An asteroid is like  
a rock hurling  
through space.



ILLUSTRATIONS BY BOB EGALTON

than Hughes thinks. According to Zdenek, a slow comet would have exploded much higher up than five miles, so the object must have been an asteroid.

Scientists do agree that it's a good thing the explosion happened in such a remote area, because, remarkably, no people died. If it had exploded above New York, for example, it would have been one of the worst disasters in history.



### Could It Happen Again?

The mystery of Tunguska, and the chance of being hit by a comet or an asteroid, makes

many people wonder: Has it happened before? And could it happen again?

Large bodies from space have certainly hit the Earth before. The most famous example is in northern Arizona. A crater almost a mile across is the scar left by a meteorite when it crashed into the Earth about 50,000 years ago.

Some people also believe that the Earth was hit by a huge comet or asteroid 65 million years ago. Clouds of dust it sent into the air led to world-wide temperature changes, which may have caused the death of the dinosaurs.

Obviously, we have been hit before—and we will be hit again. In fact, very small objects hit the Earth all the time. With all the ingredients of our cosmic soup—planets, moons, comets, asteroids, space junk—floating around together, it's

only natural that things occasionally collide with the Earth.

But what are the odds on Earth and a *huge* heavenly body colliding? David Hughes says: "Keep these magic figures in mind. The chance is that a 1/2-mile-wide asteroid will hit Earth once every two million years. If it happens, it'll be a huge disaster. But it'll only happen once every two million years."

So in case you're thinking of not handing in your homework, or not cleaning your room, you'll have to think of another excuse besides, "We could get hit by an asteroid tomorrow!" Chances are excellent that Earth will remain free of crashing asteroids and comets for another million or so years. ♦



On April 1, the U.S. will be taking its national census.  
So we thought this would be the perfect time for you to take part in...

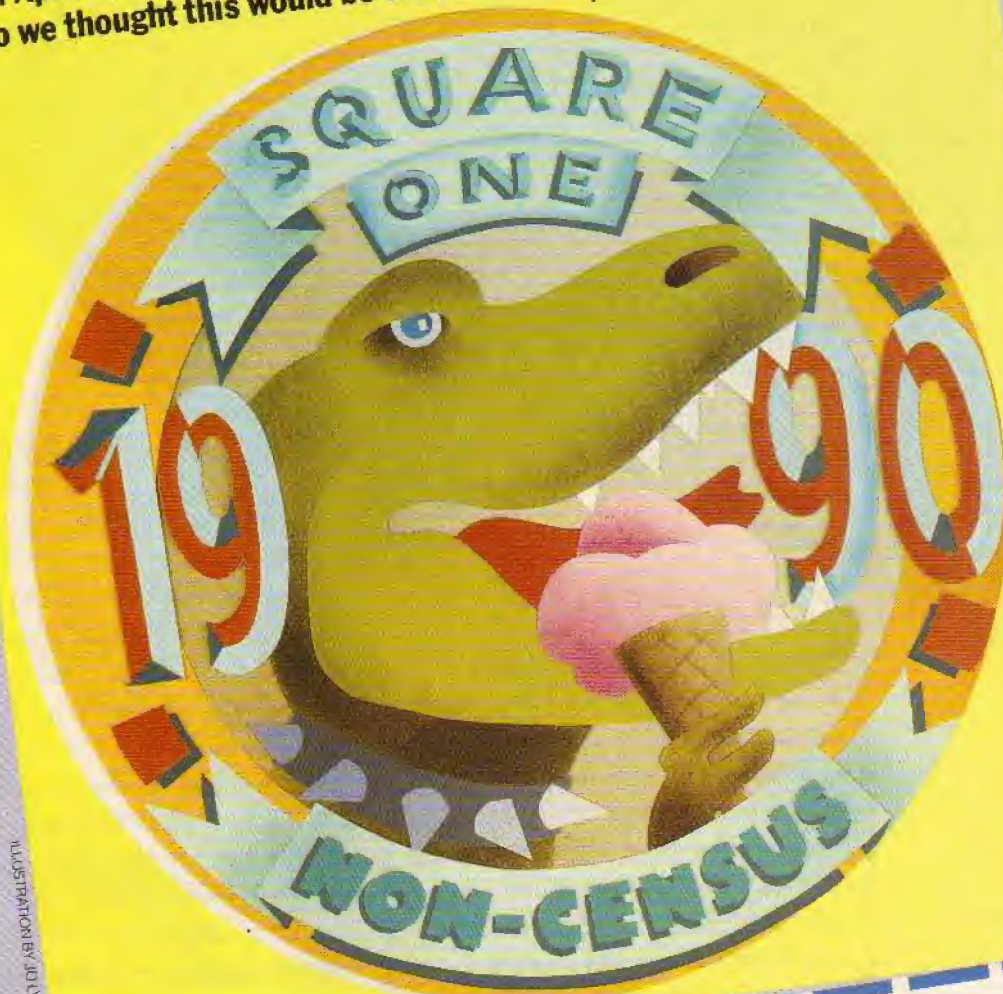


ILLUSTRATION BY JO LYNN ALCOORN

What kind of ice cream do you like? What's your favorite day of the week? We want to know what you think. Just fill out the form below and send it to:

**The Square One Non-Census**  
3-2-1 Contact Magazine  
P.O. Box 40  
Vernon, NJ 07462

We'll draw 10 names from kids who send in the census and give each of them a CONTACT T-shirt. So send in your answers right away. The results will appear in a future issue. And remember:

**We're Counting On You To Be Counted!**

★ MY NAME IS \_\_\_\_\_

★ MY ADDRESS IS \_\_\_\_\_

★ I AM A BOY \_\_\_\_\_ GIRL \_\_\_\_\_ AGE \_\_\_\_\_

1 If I could be any kind of dinosaur, I'd be a:  
Brontosaurus \_\_\_\_\_ Tyrannosaurus \_\_\_\_\_  
Triceratops \_\_\_\_\_ Other \_\_\_\_\_

2 My favorite ice cream is:  
Chocolate \_\_\_\_\_  
Vanilla \_\_\_\_\_  
Spinach \_\_\_\_\_  
Other \_\_\_\_\_

3 When I get dressed, I button my shirt:  
From the top down \_\_\_\_\_  
From the bottom up \_\_\_\_\_  
A button here and there \_\_\_\_\_

4 I think the best pet is a:  
Cat \_\_\_\_\_ Dog \_\_\_\_\_ Bird \_\_\_\_\_  
Hamster \_\_\_\_\_ Fish \_\_\_\_\_  
Other \_\_\_\_\_

5 My favorite day of the week is \_\_\_\_\_

6 If I could visit any city in the world, I'd go to: \_\_\_\_\_

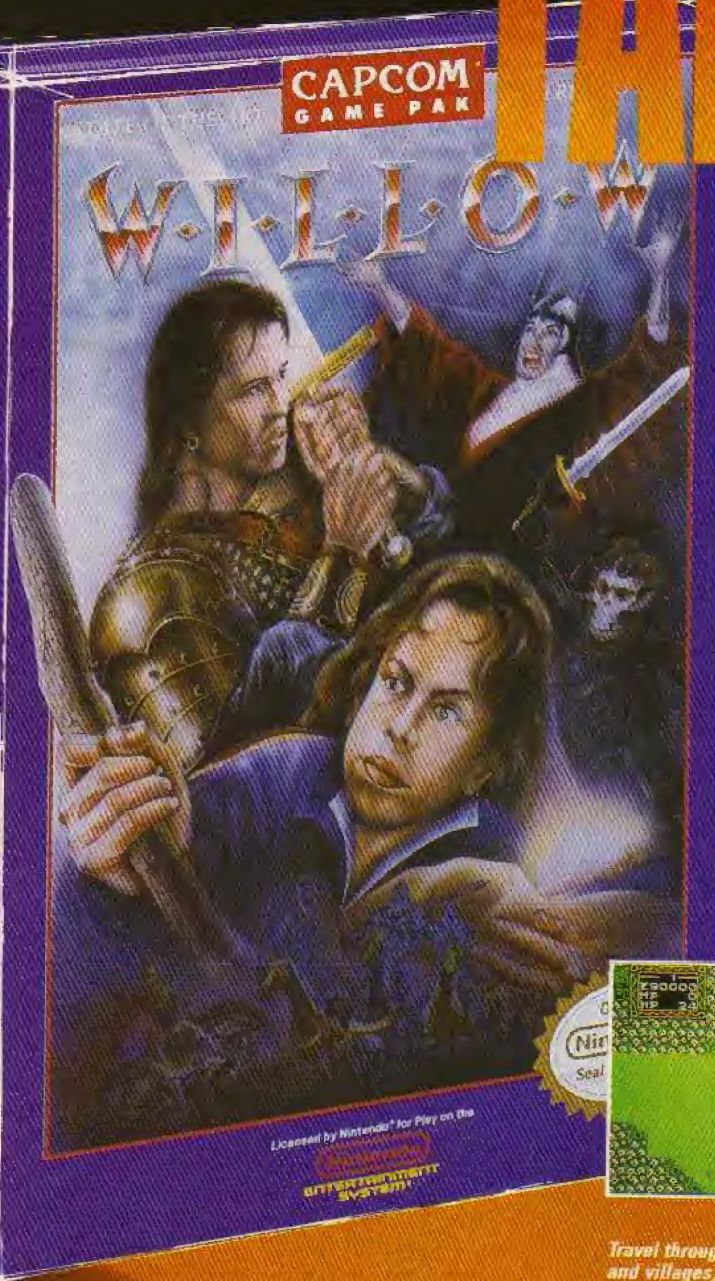


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P R E P A R E F O R A

# WICKED FANTASY



Travel back to a time of sorcery and magic when the evil Queen Bavmorda ruled the land under a reign of terror.

According to legend, a baby has been born who will destroy the heartless ruler. But the Queen vows she'll slay the child first!

As Willow, the child's chosen protector, you must face the deadly challenge of mysterious forests and villages while battling the Queen's Nockmaar army. In the meantime, your fate depends on collecting an arsenal of swords, shields and magic for the ultimate confrontation with the Queen!

So prepare yourself for the only action fantasy with wicked graphics and playability. From Capcom U.S.A.



Travel through mysterious forests and villages, accumulating weapons and magic.



Be on guard for an action-filled battle with Queen Bavmorda.

**CAPCOM®**  
USA



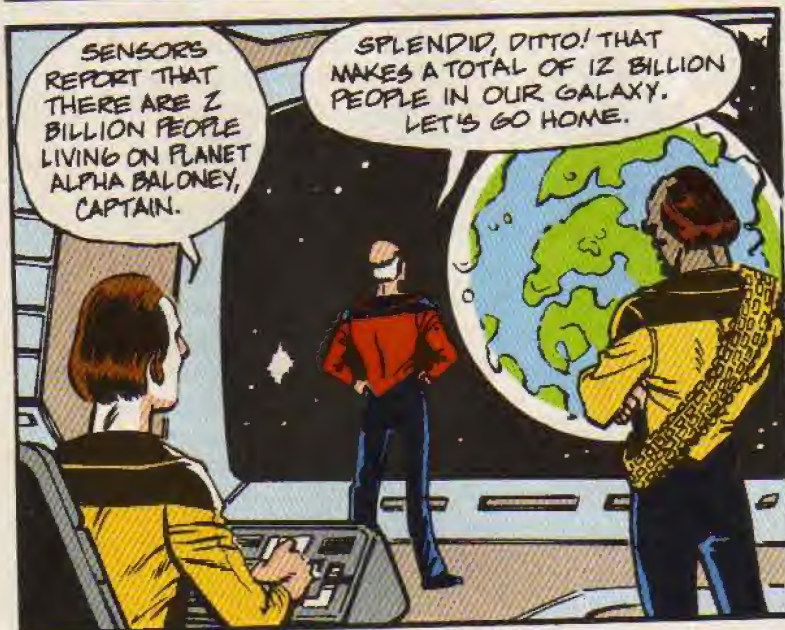
# STAR CHECK

## A SQUARE ONE PUZZLE



I'M CAPTAIN PECAN OF THE STARSHIP EXITPRISE. MY CREW WAS JUST COMPLETING THE GALACTIC CENSUS FOR THE YEAR 2590 WHEN...

STORY: RUSSELL GINNS  
ART: KERRY GAMMILL & KEITH WILSON



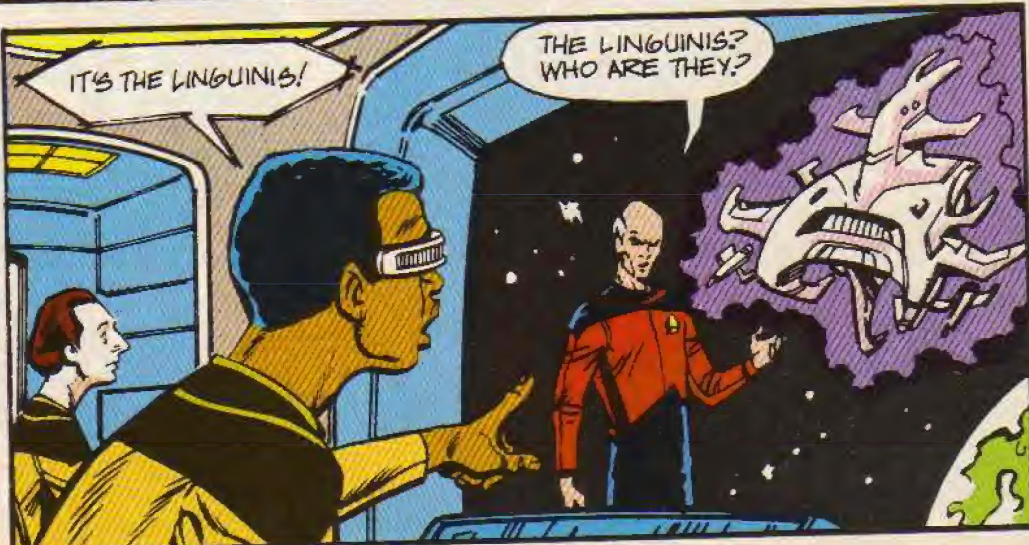
SENSORS REPORT THAT THERE ARE 2 BILLION PEOPLE LIVING ON PLANET ALPHA BALONEY, CAPTAIN.

SPLENDID, DITTO! THAT MAKES A TOTAL OF 12 BILLION PEOPLE IN OUR GALAXY. LET'S GO HOME.



ARRGH! WE SPENT ALL THIS TIME AND ONLY FOUND PEOPLE LIVING ON THREE PLANETS!

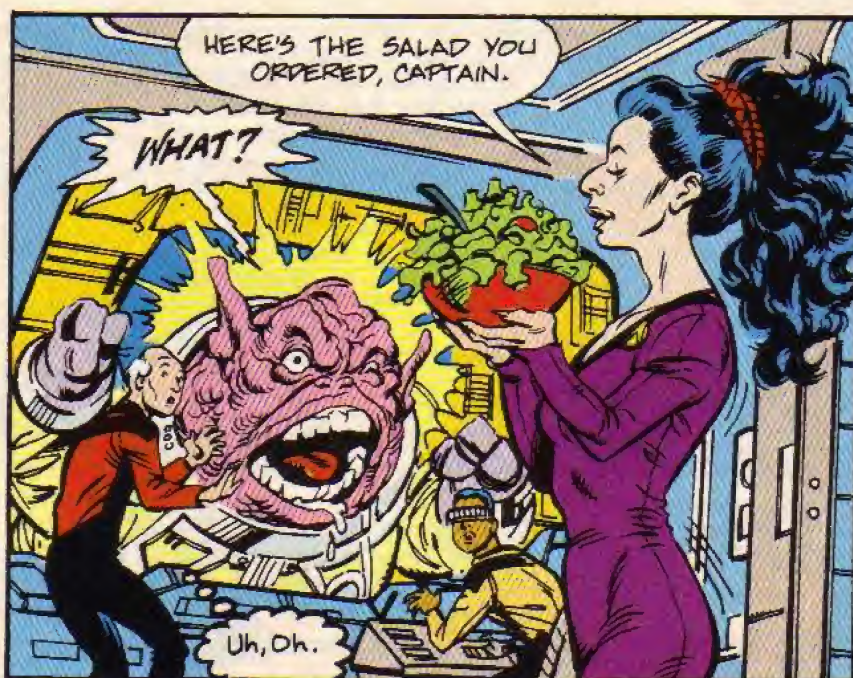
AND HALF OF THEM LIVE ON EARTH.



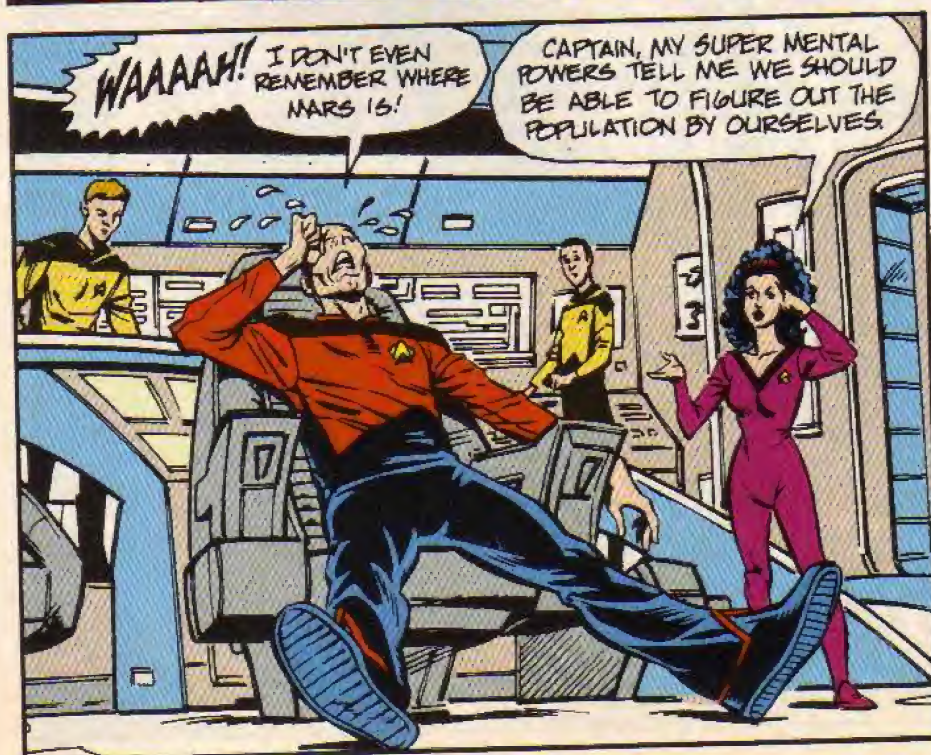
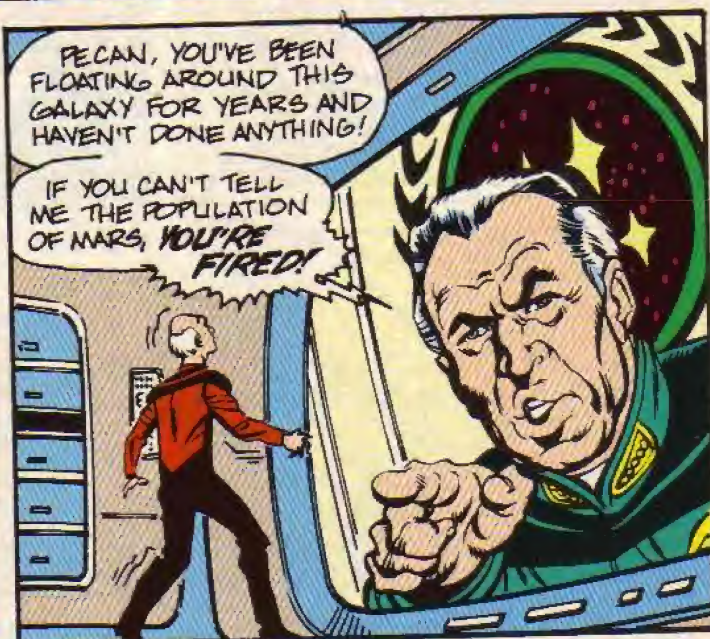
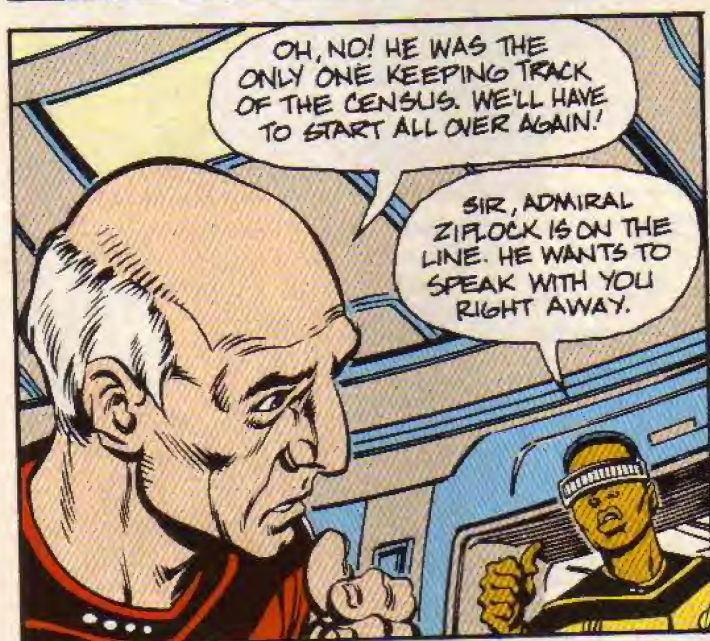
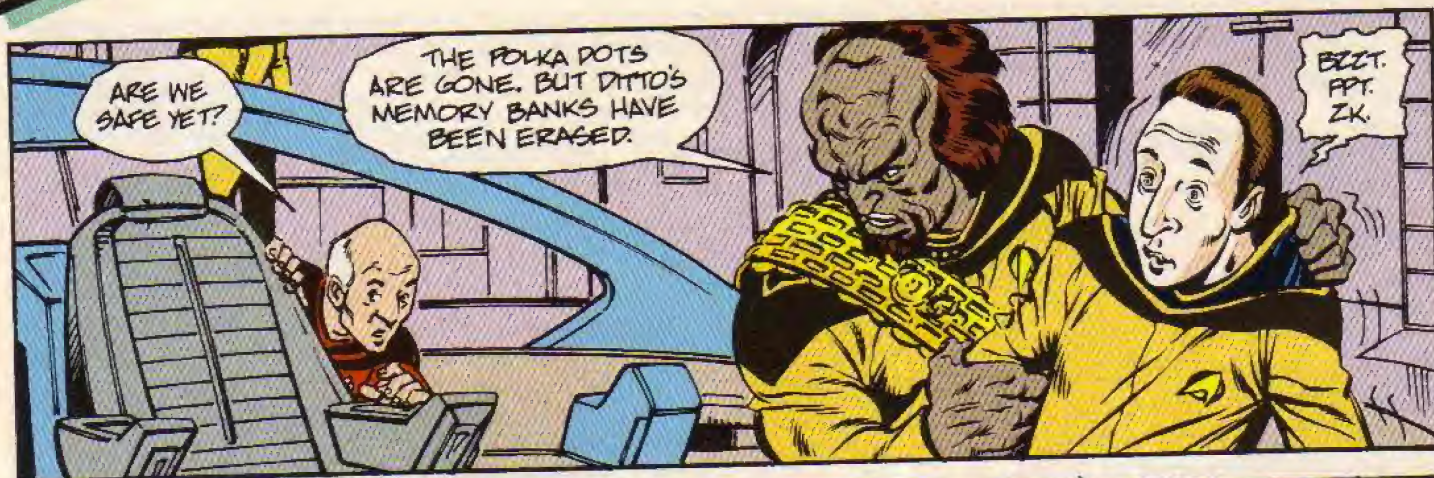
IT'S THE LINGUINIS!

THE LINGUINIS? WHO ARE THEY?









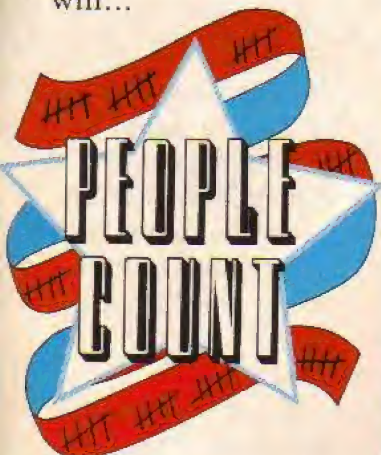
**HOW MANY  
PEOPLE ARE  
LIVING ON  
MARS IN THE  
YEAR 2590?**

HINT: IT'S ONE OF THREE PLANETS  
IN THE GALAXY WITH PEOPLE ON IT.  
ANSWER ON THE DID IT! PAGE.





Guess the new U.S. population and you'll win...



A Card Game for Two or More Players

### What You'll Need:

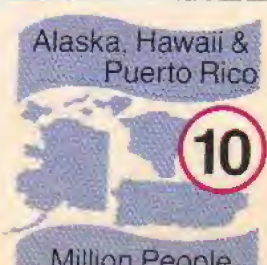
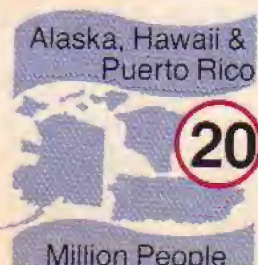
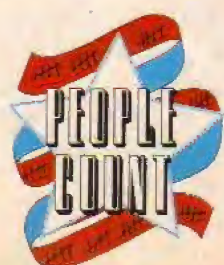
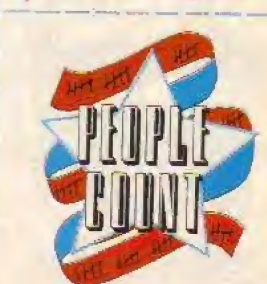
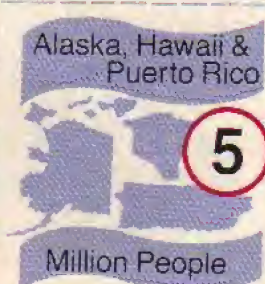
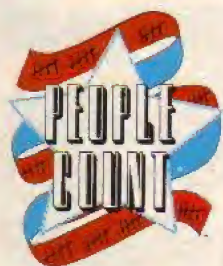
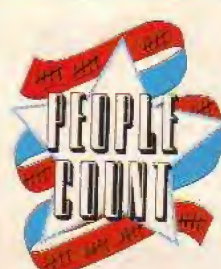
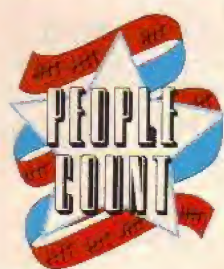
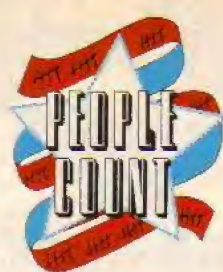
Just cut out the cards from this page. Place them face down in a pile—you're ready to play!

### How To Start the Game:

Remove the CENSUS card from the deck and shuffle. Deal four cards to every player.

Put the CENSUS card back in the deck and shuffle the cards again.

Then, every player picks a number between one and 300 (million). At the end of the game, the player who guessed closest to the census is the winner!







### How To Play:

Each turn, draw one card from the deck and add it to your hand. Then place any one card from your hand face up on the table. The number on the card stands for the population of a part of the U.S.

If you play a card for a part of the U.S. that is already on the table, your card becomes the new population for that area. Use your card to cover up the old one.

When someone draws the CENSUS card, the game stops. Add up all the face up cards on the table to find the new U.S. population.

Whoever guessed closest to the census is the winner!

### Some Strategy Tips:

Pick a number between 150 and 250 (million). It's much easier to win that way.

If you have a card with a very big or very small population, save it for a while so it won't get covered up right away. But don't wait too long. The census might happen before you have a chance to play the card! ♦



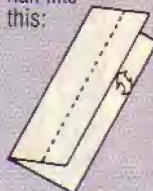
# It's a Square One

## FOLD-IN

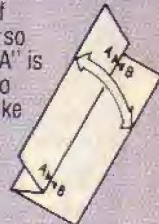
What's wrong with Professor Henpickle's new discovery?  
Fold in and find out!

HOW TO FOLD IT:

1) Fold the page in half like this:



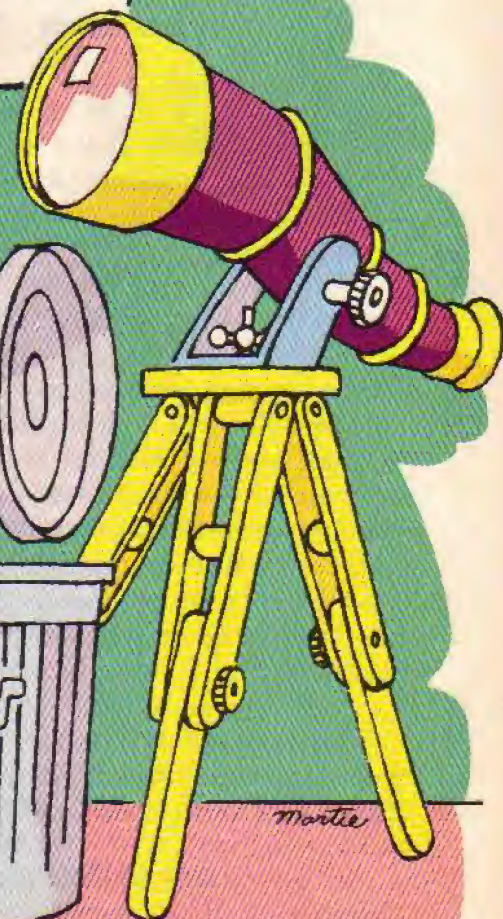
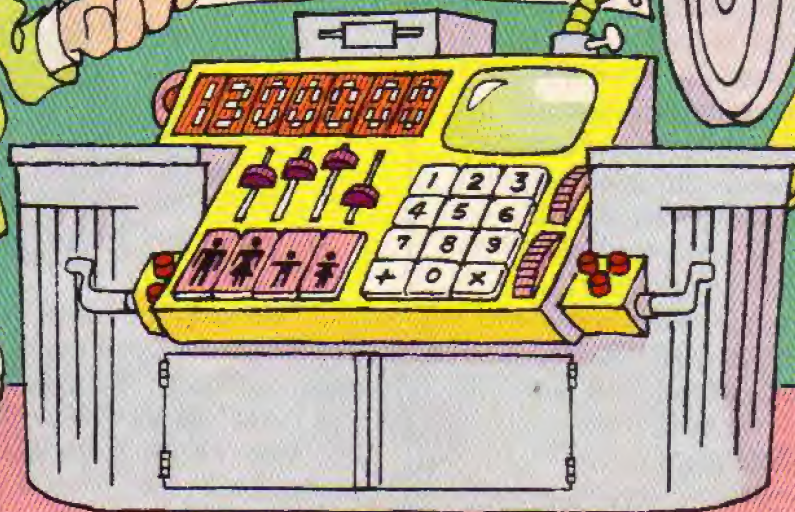
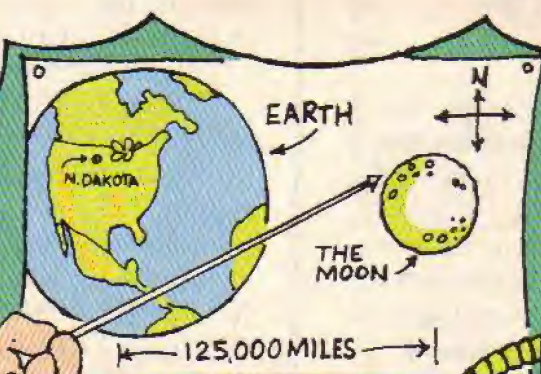
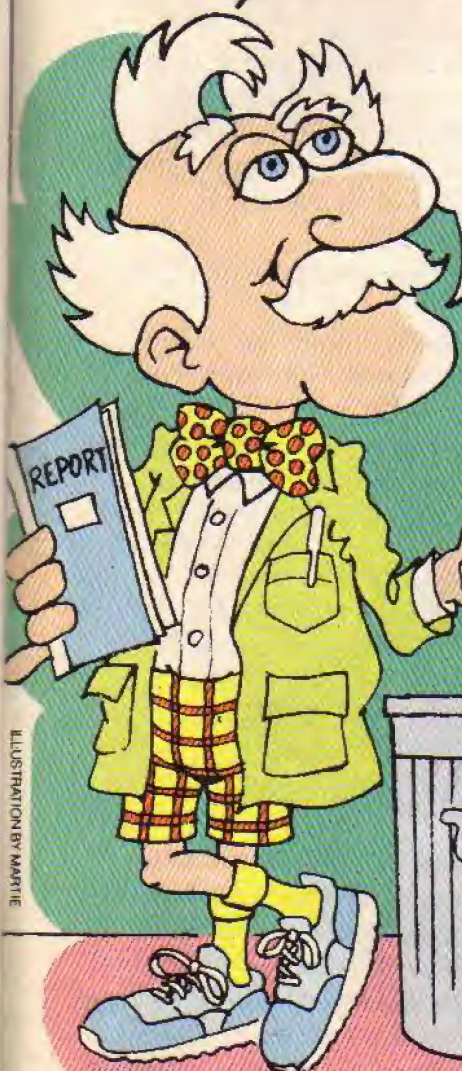
2) Grab the top left corner and fold back in half again so that "A" is next to "B" like this:



A▶

◀B

I'VE JUST FOUND  
1,300,000 PEOPLE LIVING ON  
THE MOON! INCREDIBLE, ISN'T IT?  
MY DISCOVERY IS A MIRACULOUS  
TRIUMPH OF SCIENCE! I'LL BE A SMASH  
HIT AT THE SCIENTISTS' BALL!  
MY REPORT BELONGS IN...



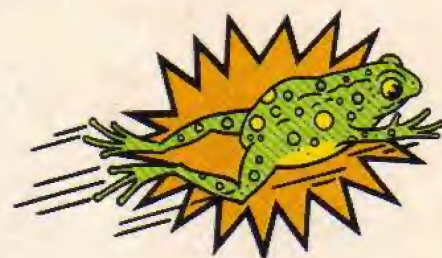
HERE'S HOW PROFESSOR HENPICKLE'S  
STRANGE, NEW AND AMAZINGLY DARING  
DISCOVERY HAPPENED:  
HE POINTED HIS TELESCOPE AT  
NORTH DAKOTA AND AIMED HIS  
MAGNIFICENT CENSUS-TAKING MACHINE  
125 x 1,000 MILES TO THE EAST

A▶

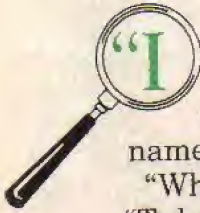
◀B



# THE BLOODHOUND GANG



## THE CASE OF THE SLIMY CRIME by Dan Ellsh

 "Isn't Ralph neat?" said Ricardo. He was sprinkling water on his pride and joy, a six-inch-long pet bullfrog named Ralph.

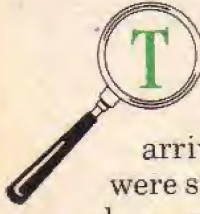
"Why are you doing that?" Skip asked.

"To keep him wet," Ricardo explained. "On a hot day like today a frog could dry up and die. And today Ralph has to come in first at the World Federation Frog Jumping Contest!"

The Gang was about to leave for this important event. Each year, Frog Federation members came from all parts of the country to enter their athletic amphibians in the contest. The winner became famous—for a few minutes—and received a \$1,500 prize. If Ralph leaped his way to first place, the Gang planned to invest in a new computer.

Placing his prized animal back in his moist terrarium, Ricardo crowed, "Ralph is the baddest bullfrog around!"

### Day of the Frogs

 The frog jumping grounds were in the old high school football field at the edge of town. As the Gang arrived, swarms of excited frog-lovers were streaming into the bleachers. High above, a blimp sailed by, recording the event for the cable TV sports show "Frog Jumping

Weekend Update."

As the Gang made their way toward the field, a rumor began to circulate.

"Did ya hear? Harry Samson, the king of frog breeders, is gonna show up."

"Then this event is definitely prime time!"

"You said it—he's entering a frog named Jumbo that's never jumped in public before! Word on the street—and in the swamp—is that this frog can go 35 feet in three leaps."

Ricardo's eyes bugged out.

"What kind of distance usually wins?" asked Vikki.

"About 20 feet in three jumps," Ricardo replied. "The record is 33 feet. Samson's frog must be some jock."

No sooner was the Gang stationed on the field with the other contestants, then a man in a tuxedo stepped onto the platform.



"Greetings!" he said into the microphone. "I am the judge of this event. Before we start, allow me to introduce Joseph W. Finness, of the *Finness Book of World Records*."

"Wow," Vikki said. "He must be here because he expects Harry Samson's new frog to leap into the record book."

Joseph Finness stepped in front of the microphone. Stuffed into and dangling from his pockets were stop-watches, tiny measuring scales, calipers, tape measures, electronic calculators, an abacus and dozens of other devices.



"We're all here for one reason, and it's not because we love to eat frog's legs! No, we love to calculate the distances those little critters soar. So let the jumping begin!"

### One Giant Leap for Frogkind



he contest began. Contestants led frog after frog to the starting line. The first jumped 14 feet; the second

12. As the Gang waited for their turn, Ricardo gave his prized creature a pep-talk. "You can do it, big guy," he pleaded with Ralph. "You're the Carl Lewis of frogs. Give me a gold medal jump and I'll give you an extra cricket tonight for dessert."

"Hey, look," Vikki said.

"Not now," hissed Ricardo. "I'm psyching up Ralph for the..."

"Harry Samson isn't here," Vikki interrupted.

Why would Harry Samson miss this event? But it was true: When Samson's name was called to jump his frog, no one answered.

"Maybe his frog got leg cramps," said Vikki.

"Next contestant is Lenny Traynor," announced the judge.

A heavysset man stood up and lumbered to the starting line.

"The rest of you losers are competing for second place," he said loudly as he swaggered past the Gang. "'Cause me and my frog Crazy Janey have been practicin' for three hours already. He jumped 34 feet."

"Who is this fat toad?" Vikki asked.

Ricardo had never seen him before.

"Crazy Janey is humongus!" Skip marveled. "She must be about eight inches long."

"The bigger they are, the harder they fall," said Ricardo, but he didn't sound confident.

"On your mark, get set, jump," the judge called out.

Crazy Janey stretched her legs and leaped, one, two, three times into the air.

"Twenty-two feet!" announced the judge.

The crowd cheered. It wasn't a record, but still, very impressive. Lenny took a bow.

"I'm a frog expert, see?" he bragged to anyone in earshot. "I know everything on the subject of frogs."

Ricardo was next up. The Gang walked with him to the starting line. Excitedly, Ricardo placed Ralph down. On the starter's

signal, he touched Ralph's back. With a mighty push, the frog was off. Three leaps and 15 feet later, Ralph landed.

"Maybe I'll place second," sighed Ricardo.

But when the contest was all over, Lenny Traynor and Crazy Janey were still in first. Ralph was a distant sixth.

Facing Lenny, the judge said, "I'm happy to present you with this check for \$1,500."

"Wait!!"

The crowd hushed. Running toward the platform from the edge of the field was a young man with sunglasses and long hair.

"That's Harry Samson," Ricardo said over



ILLUSTRATIONS BY SANDRA SHARP

the buzzing of the spectators. "But it's too late for him to compete."

"Lenny Traynor is a thief!" Samson cried, trying to catch his breath. "Crazy Janey isn't Crazy Janey. Lenny Traynor came to my house this morning, tied me up and stole Jumbo."

For a few minutes, everyone spoke at once. During the uproar, the Gang worked its way up to the stage.

"We're the Bloodhound Gang," Vikki announced.

The crowd instantly grew quiet. Even Joseph Finness looked impressed. Lenny Traynor bit his lower lip nervously.

"Let's get to the bottom of this," said Skip, turning to Samson. "What proof do you have that Crazy Janey is Jumbo? Since no one's ever seen your frog, how can we be sure you're telling the truth?"

"That's simple," answered Samson. He reached into his pocket and pulled out a photo of a large bullfrog. Finness held it up.

"The frog appears to be the same size," he said. "But the coloring is totally different. Crazy Janey is light yellow-green, whereas





# THE BLOODHOUND GANG

this frog is dark."

"Yeah, answer that one, stupid," chuckled Traynor.

"Wait," said Ricardo. "Isn't it true that frog skin can change color due to sunlight?"

"He's right," Harry Samson said. "This picture was taken on an overcast day—so the skin was very dark. On a bright day like today, any bullfrog's skin will be lighter."

"That still doesn't prove a thing," said Lenny, picking up the frog and walking off the platform, check in hand. "Later."

Just then, Harry Samson's jaw dropped.

"Hey," he yelled, looking at the prize-winning frog. "My poor baby looks parched. He needs water—and in a hurry!"

As two security guards held Lenny, Ricardo brought over a bowl of water. Samson grabbed for it, but Ricardo had an idea. Instead, he handed the bowl to Lenny.

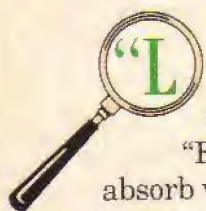
"Give the frog a drink," he said.

"Sure thing, sport."

Lenny put down the frog and lay the bowl in front of the thirsty amphibian.

Immediately, Ricardo turned to the judge and Joseph Finness.

## Leaping to the Right Conclusion



Lenny Traynor is a fake."

"Explain yourself, young man," said Finness sternly.

"Frogs don't drink like humans. They absorb water mostly through their skin and sometimes by mouth. A true frog authority would have put Jumbo directly in the bowl."

"And wouldn't a frog expert also know not to keep his frog in the hot sun for three hours before a jumping contest?" Vikki asked.

"No wonder Jumbo only jumped 22 feet!" A sudden movement by Jumbo quieted Samson. The giant frog hopped into the bowl, stuck his whole body underwater and took a nice refreshing drink.

As they led Lenny away for frog-napping,

he tried to say something, but it came out sounding like a croak.

"What's the matter, Lenny?" asked Ricardo. "Got a frog in your throat?"

When the laughter died down, Joseph Finness spoke to Samson.

"Do you really think that frog of yours can set a record when he's not dehydrated?"

"For sure."

"Then I guess I can stay in town a few more days."

Three days later, Skip and Vikki were reading quietly in their office when Ricardo barged into the room.

"Guess what?" he cried. "Jumbo set the frog-jumping record. He's going to be in the *Finness Book of World Records*."

"How far did he go?" asked Rick.

"Five hundred feet!"

"Get serious," Vikki scoffed.



ILLUSTRATION BY SANDRA SHARP

"I am serious," Ricardo said. "And that was just his first jump. On the second he went 1,000 feet! And then he jumped over a 10-story building! Look in today's sports section. It's all there."

Ricardo handed them the paper. In the sports section was the headline:

### Frog Leaps over Building!

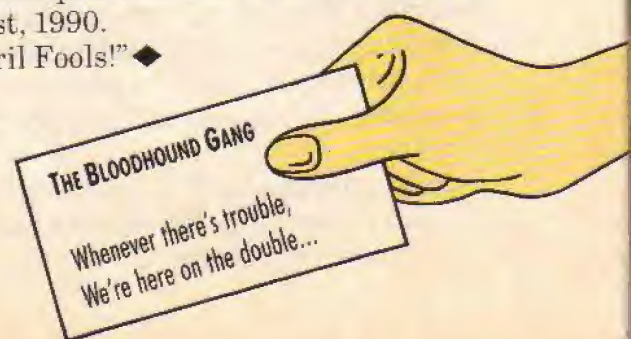
"Unreal," Skip said.

Just then, Ricardo started laughing.

"What's so funny?" Vikki asked.

Ricardo pointed to the date on the paper—April 1st, 1990.

"April Fools!" ♦







CONTACT

LENS

## NECK AND NECK

It looks like these two giraffes are getting to know one another better, right? Wrong! These young males are fighting!

When male giraffes grow up, they have to find their own herd to lead. To do this, they have to fight other males to show who's boss. So, young males spend

a lot of time practice-fighting with the other males in the herd.

Sometimes the giraffes push against one another and slam heads. But the fighting can get serious. During these fights, the giraffes wrap their necks together and shove and push with their horns. Giraffes also do this to defend themselves against lions or tigers.

Giraffe fighting is very noisy. The shoving and pushing can be heard for miles across the African plains.



# ANY QUESTIONS?

By Jane Rosenberg

WHAT

## IS STYROFOAM MADE OF?

Styrofoam is the name of a solid plastic foam invented in the 1930's. It is one of the many types of plastic foams called "polystyrene foams." These foams are used to insulate buildings, freight cars and trucks.

To make the foam, the plastic is filled with millions of tiny air bubbles. If you could break a piece of this foam apart, you would see that it is made up of many small white beads.

Another type of styrofoam is more solid. It is probably the kind you are more used to seeing. Many plastic drinking cups, egg cartons and fast-food containers are made of this kind of foam.

Many scientists think types of styrofoam can harm the environment. When burned, they release chemicals that may affect the ozone layer. And they are hard to destroy when thrown in the garbage. So people are working on newer and better forms of polystyrene foams.

Question sent in by Eliese Baker, Austin, TX.

WHO

## INVENTED SIGN LANGUAGE?

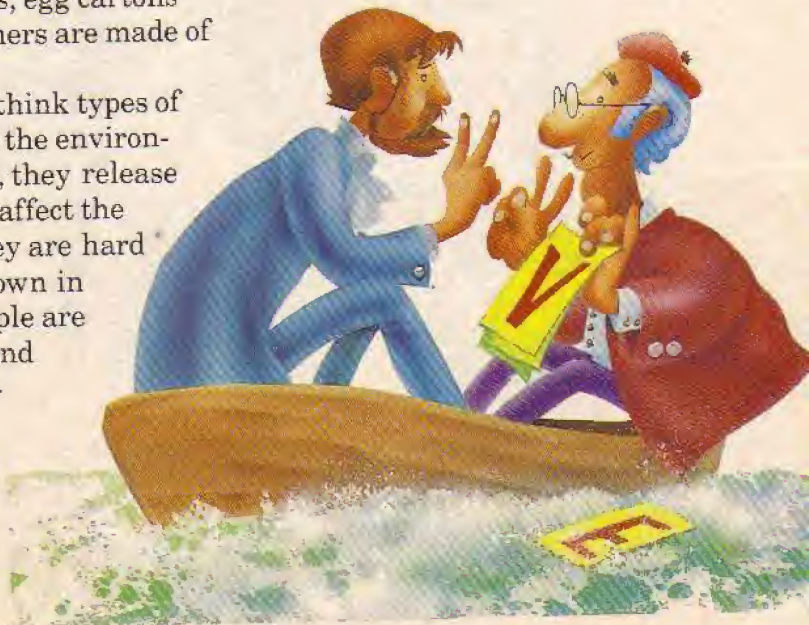
Sign language is a language of gestures and hand symbols. It is used by people who are hearing disabled. Exactly who or where or when sign language started is hard to say.

Language experts *do* know, however, that the first person to bring sign language to the U.S. was Thomas Gaulladet.

Gaulladet traveled to France where he met a deaf teacher named Laurent Clerc. Together, they traveled by boat back to America. On the trip, Clerc taught Gaulladet French sign language.

In 1817, Gaulladet opened a school for the deaf in Hartford, CT, and Mr. Clerc was the school's first teacher. The students at the school helped sign language to grow by adding new signs — all of which are still in use today!

Question sent in by Andy G. Ramos, Akron, OH.







**W  
H  
Y**

## DO SNAKES SHED THEIR SKIN?

Snakes shed their skin for pretty much the same reason we need to keep buying new sneakers: After a while, they wear out! Most baby snakes shed, or "molt," their skins shortly after they are born. After the first time, a snake will molt again whenever its skin becomes too worn—or as it gets too big for its old skin. Younger, more active snakes molt more often than older, less active snakes.

The snake begins shedding by rubbing its nose on a rough surface such as the ground. This loosens the skin around its mouth and head. Then the snake finds a rock or branch that will hold the edges of loosened skin. Very slowly, it crawls out of the old skin. A new, slightly larger layer of skin has formed underneath. The old skin, which is now turned inside out, is left behind.

When a rattlesnake molts, a new segment is often added to the rattle on its tail. That's how you can tell how old it is. But most people facing a rattlesnake would rather not stick around long enough to study the rattle!

*Question sent in by Craig Bryan, St. Louis, MO.*

**W  
H  
E  
N**

## YOU YAWN, WHY DO OTHER PEOPLE YAWN?

Some scientists believe there's a built-in "yawn detector" in your brain. When we see someone yawn, or when we *think* about yawning, this can make us yawn, too. Scientists aren't sure why this happens.

But there are a few things that scientists *do* know about yawning. You yawn most when you're tired or bored. It's a way of stretching with your face and upper body. A yawn is not caused by a lack of oxygen in the lungs. So it's not a way of taking a deep breath.

A yawn opens the eustachian (say *you-STAY-she-on*) tubes, which connect the back of the throat to your inner ear. This helps adjust the air pressure in your middle ear.

Try this experiment: Give a big yawn. Then look around to see if anyone else saw you and "caught" the same idea!

*Question sent in by Jenny G., Herndon, VA.*



**Do you have a question  
that no one seems able to answer?  
Why not ask us? Write to:  
Any Questions? 3-2-1  
Contact, P.O. Box 40, Vernon,  
NJ 07462**



# BASIC TRAINING

## Programs For Your Computer

### MEMORY MADNESS

**W**e'd like to tell you what this program is about, only we forgot! We're sure it's really great for whatcha-ma-callit and also for, uh, something or other. Oh, now we remember! This program is a memory tester. (And it looks like we need one.)

Every time you play this game, the program tells you about 10 objects that are scattered around a room. Each object is in a different place. For example, the vase might be on the piano and the book on the sofa. Pay attention to what's on the screen because you have only about 30 seconds to memorize it.

When your time is up, the screen goes blank and the program tests you on what you have just seen. Then it gives you your score and asks if you want to play again. If you have a super memory, you can speed things up. (You can also change the speed by increasing or decreasing the value of T in line 10.)

The program is for Apple II computers. For IBM machines change all HOME statements to CLS. For Commodore 64/128, change all HOME statements to PRINT CHR\$(147).

And that's all there is to it. Probably. Unless there's something we forgot to tell you. Maybe you have to whatever-you-call-it before you do the thinga-mabob. Oh well, maybe if we play the game, we'll remember.

```

10 T = 700: DIM
   OBS$(10), OZ$(10), PLS$(10), PZ$(10)
20 FOR X = 1 TO 10
30 READ A$: OBS(X) = A$: NEXT X
40 FOR X = 1 TO 10
50 READ A$: PLS(X) = A$: NEXT X
60 FOR X = 1 TO 10
70 OZ$(X) = " ": PZ$(X) = " "
80 NEXT X
90 HOME: PRINT "GET READY"
100 FOR X = 1 TO 30
110 FOR DE = 1 TO 100: NEXT DE
120 PRINT "X";: NEXT X
130 HOME
140 FOR X = 1 TO 10
150 A = INT ( RND (1) * 10) + 1
160 IF OZ$(A) <> " " THEN 150
170 BS = OBS(A): OZ$(A) = STR$(X)
180 A = INT ( RND (1) * 10) + 1
190 IF PZ$(A) <> " " THEN 180
200 CS = PLS(A): PZ$(A) = STR$(X)
210 PRINT "THE "; BS: " IS ON
   THE "; CS
220 PRINT: NEXT X
230 FOR X = 1 TO 30
240 FOR DE = 1 TO T: NEXT DE
250 PRINT "X";: NEXT X
260 HOME: R = 0
270 PRINT "TIME TO REMEMBER!!"
280 FOR X = 1 TO 10
290 A = INT ( RND (1) * 10) + 1
300 IF OZ$(A) = " " THEN 290
310 PRINT X: " ) THE "; OBS(A): " IS
   ON THE ---"

```



ILLUSTRATIONS BY MARTIN LEMELMAN



```

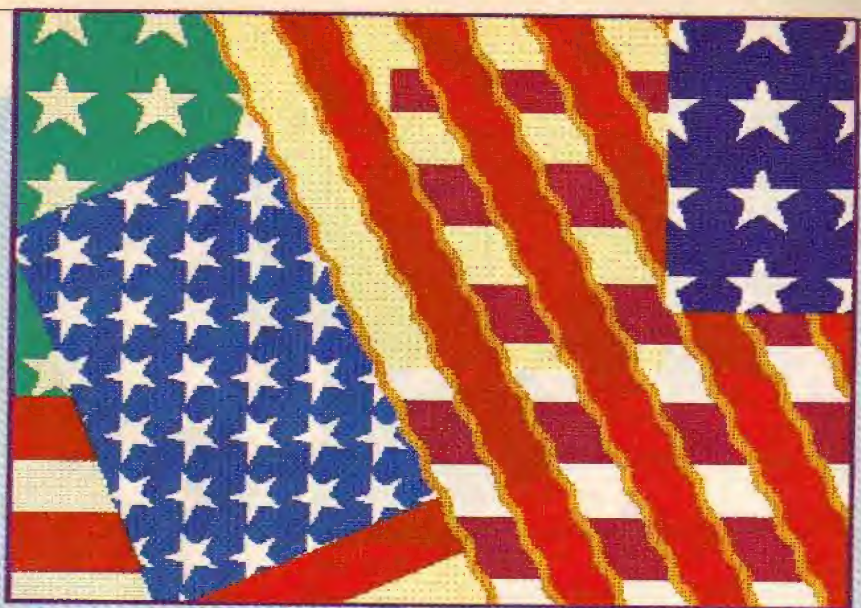
320 INPUT BS
330 Y = 0
340 Y = Y + 1
350 IF Y > 10 THEN PRINT :
    PRINT "TRY AGAIN": GOTO 310
360 IF BS = PL$(Y) THEN 380
370 GOTO 340
380 IF PZ$(Y) = OZ$(A) THEN 410
390 PRINT "WRONG!"
400 OZ$(A) = " ": GOTO 430
410 PRINT "RIGHT": R = R + 1
420 OZ$(A) = " ": PZ$(Y) = " "
430 NEXT X
440 FOR DE = 1 TO 400: NEXT DE
450 HOME
460 PRINT "YOU GOT "; R; " OUT
    OF 10 CORRECT."
470 INPUT "PLAY AGAIN Y/N "; AS
480 IF AS < > "Y" THEN 530
490 INPUT "SPEED IT UP Y/N "; AS
500 IF AS = "Y" THEN T = T - 100
510 IF T < 200 THEN T = 200
520 GOTO 60
530 END
540 DATA VASE, BOOK, PHOTO,
    CLOCK, FRUIT
550 DATA MAGAZINE, SWEATER,
    FISHBOWL, CANDLESTICK,
    LAMP
560 DATA CHAIR, COFFEE TABLE,
    SOFA, TELEVISION, MANTLE
570 DATA PIANO, FLOOR,
    BOOKCASE, BENCH,
    WINDOWSILL

```

## THE COMMODORE'S FLAG

For Commodore 64 Computers

**H**ere's a program to run on your Commodore 64 that paints an American flag. It uses one of the Commodore's special graphics characters, the star. If you're feeling creative, see if you can make a program for the 64's sound system that will play a few notes of the *Star Spangled Banner* while your flag unfurls.



```

5 POKE 53280,14: POKE 53281,6
10 PRINT CHR$(147): REM CLEAR
    SCREEN
20 C=55296 + 2*40: S=1024
    + 2*40:
    GOSUB300: REM GO
    PAINT STARS
30 FORN=1 TO 4: C=C+40:
    S=S+40: GOSUB400: REM GO
    PAINT MORE STARS
40 C=C+40: S=S+40:
    GOSUB300: NEXTN
50 C=55296+21: S=1024 + 21
60 FORN=1 TO 3: GOSUB 500:
    NEXTN: REM GO PAINT
    UPPER STRIPES
70 C=C-21: S=S-21
80 GOSUB800: REM GO PAINT
    LOWER STRIPES
90 FORL=0 TO 39: POKE C + L,
    2: POKES + , 160: NEXTL: REM
    PAINT LAST STRIPE
99 REM LOOP IN
    STATEMENT
    100 WHILE FLAG IS BEING
    DISPLAYED
100 GOTO 100
140 REM TO QUIT HIT "RUN STOP"
    AND HOLD IT AS YOU HIT
    "RESTORE"
299 REM SUB300 AND SUB400
    PAINT THE STARS
300 FORX=2 TO 17 STEP 3:
    POKES + X,42:
    POKES + X + 1,32:
    POKES + X + 2,32:
    POKEC + X,1: NEXTX: RETURN
400 FORY=2 TO 14 STEP 3: POKES
    + Y,32: POKES + Y + 1,42:
    POKES + Y + 2,32: POKEC + Y
    + 1,1: NEXTY
410 RETURN
499 REM SUB500 AND SUB800
    PAINT THE STRIPES

```

```

500 FORP=2 TO 1 STEP -1: FORR
    =1 TO 2: FORL=0 TO 18
510 POKEC + L,P: POKES + L,160:
    NEXTL
520 C=C+40: S=S+40: NEXTR:
    NEXTP: RETURN
800 FORN=1 TO 3: FORP=2 TO
    1 STEP -1: FORR=1 TO 2: FORL
    =0 TO 39
810 POKEC + L,P: POKES + L,160:
    NEXTL
820 C=C+40: S=S+40: NEXTR:
    NEXTP: NEXTN: RETURN

```

## SEND US YOUR PROGRAMS

If you've written a program you'd like us to print, send it in. If we like it, we'll print it and send you \$25. Include a note telling us your name, address, age, T-shirt size and type of computer.

All programs must be your own original work. We cannot return programs. Please do not send discs.

Send your programs to:







by Russell Glnns

## LIGHTHAWK

Polluters beware! Lighthawk is watching! Can you find a path from the plane to the scene of the crime?

Answer on the Did It! page.



## METEOR SURPRISE

It's a meteor shower! But don't panic, everything that doesn't match the magic meteor will burn up in Earth's atmosphere. Circle all the meteors that are shaped just like the magic one and you'll find a secret message.

Answer on the Did It! page.





## APRIL FOOT!

Someone's been playing a practical joke on the Higgins family. Everything in their house is mixed up. Can you help get things back to normal again?

Just add or change one letter of each sentence. We did one for you.

Answers on the Did It! page.

"Make sure you  
**CRUSH** your teeth  
after every meal!"

**BUTTER**  
"The **BUTLER** is in  
the refrigerator!"

"Uncle John is  
wearing a warm  
wool **GOAT**."

"My **ANTS** are in the  
washing machine!"

"I drove home from  
work in the **CAT**!"

PURR

ILLUSTRATIONS BY RICHARD WEISS

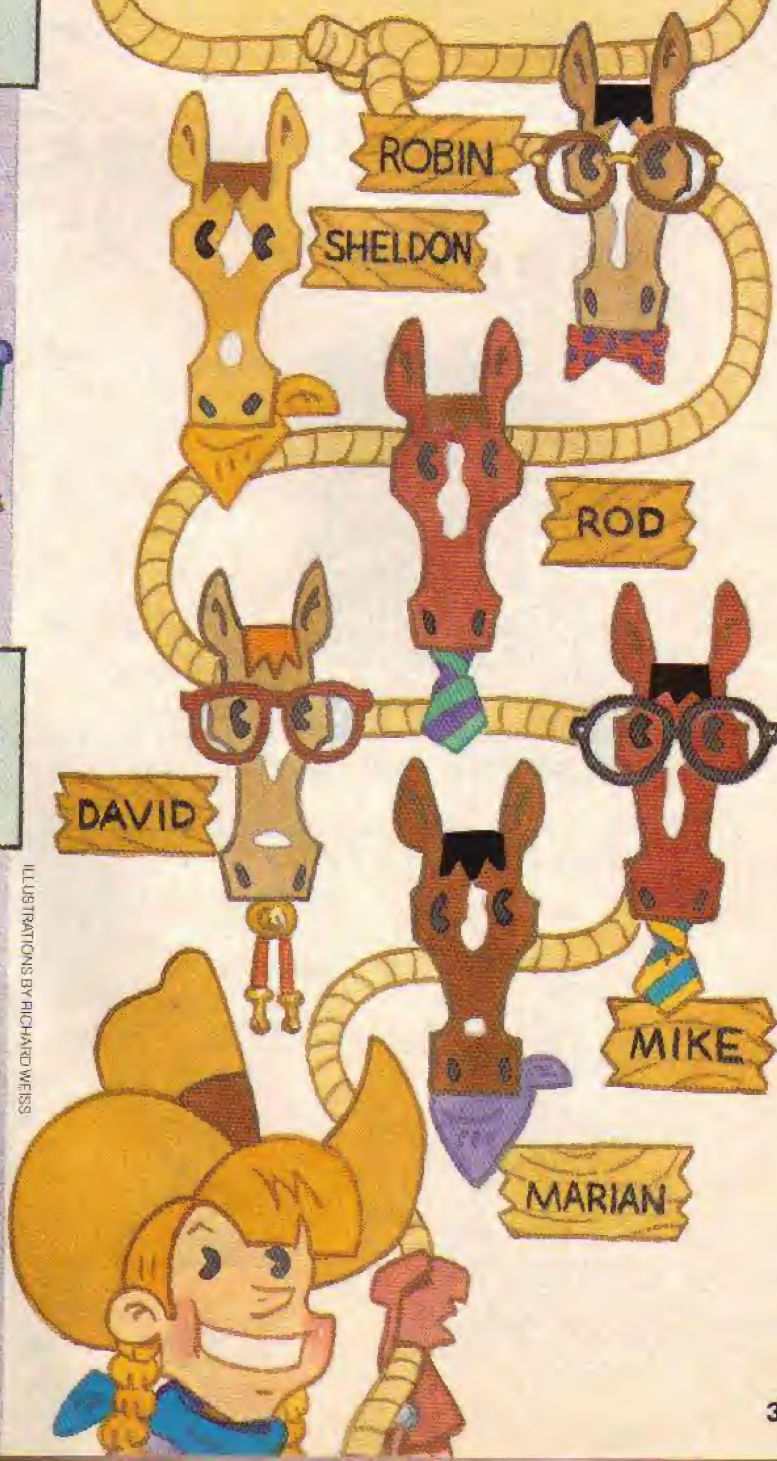
## HORSING AROUND

Alice has a new baby horse. Can you figure out its name?

Just read the clues below. The only horse that fits all three will be the new foal.

- 1) He is either wearing glasses or a tie.
- 2) He has brown hair.
- 3) There are less than six letters in his name.

Answer on the Did It! page.





# Did it

## STAR CHECK

There are 4 billion people living on Mars. Unfortunately, Captain Pecan couldn't figure that out. He now pilots a garbage barge between the planet Alpha Baloney and its moon Zorax.

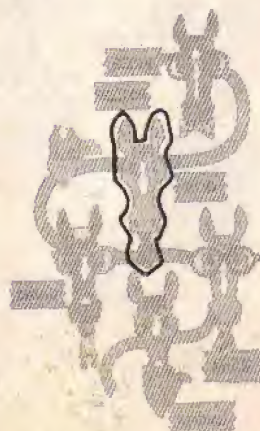
## METEOR SURPRISE

Answer: BLAM!

## LIGHTHAWK



## HORSING AROUND



Answer: ROD

## APRIL FOOT!

- ✕ BUTTER instead of BUTLER
- ✕ PANTS instead of ANTS
- ✕ COAT instead of GOAT
- ☆ CAR instead of CAT
- ✕ BRUSH instead of CRUSH

## CORRECTION

- ★ Due to an error in printing, the "Oh Lucky Day" word search in the March issue had the words already circled. Please forgive us. It won't happen again—we promise!

## NEXT MONTH

- ☆ Here's a look at what's coming in the May 1990 CONTACT:

## SAVING ELEPHANTS

- ✕ African elephants are in danger of dying out because they are hunted for their ivory tusks. Find out what's being done to help save the largest land creatures on Earth.

## CALM DOWN!

- ✕ Do you get nervous before a big test or a big game? Relax, everyone does! Discover some tips on dealing with stress in this feature story.

## SAY CHEESE!

- ✕ Celebrate 150 years since the first photograph was taken as we focus in on this big anniversary.

## PLUS

## SQUARE ONE TV

## THE BLOODHOUND GANG

## FACTOIDS

## BASIC TRAINING

## AND MUCH, MUCH MORE!





**HERSHEY'S**

**GET READY FOR  
AN AWESOME  
ADVENTURE!**

Climb your way to the giant glass of really chocolatey chocolate milk at the top of the mountain. Then, count the number of spoons, straws, Hershey's syrup cans, bottles, Hershey's chocolate milk mix cans and Hershey's milk cartons. True chocolate milk lovers will find at least 35; find all 42 and you're a milk mix maniac!



ALL YOU NEED TO GET BLACK AND BLUE.



ALL STAR'S. ALL YOU NEED.



Photo: Dwight Ormsted 1990 Converse, Inc.

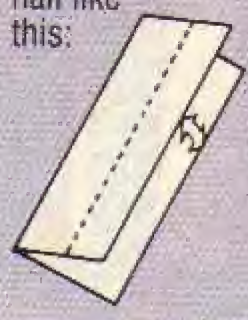


What's wrong with Professor  
Henpickle's new discovery?

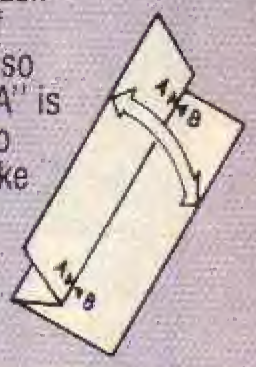
Fold in and find out!

HOW TO  
FOLD IT:

1) Fold the  
page in  
half like  
this:



2) Grab the  
top left  
corner and  
fold back  
in half  
again so  
that "A" is  
next to  
"B" like  
this:



**A** **B**



ILLUSTRATION BY MARTIE

HES  
STARING

AT

MAINE

**A** **B**